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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

H.R. 3072

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF DEFENSE FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1990, AND FOR OTHER PURPOSES

PART 6 (Pages 1–953)

DEPARTMENT OF DEFENSE

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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

THURSDAY, JUNE 22, 1989

U.S. Senate,
Subcommittee of the Committee on Appropriations,
Washington, DC.

The subcommittee met at 2:05 p.m. in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Hollings, Johnston, Leahy, Bumpers, Harkin, Stevens, Garn, Kasten, Rudman, Cochran, and Specter.

DEPARTMENT OF DEFENSE

Office of the Secretary

STATEMENT OF HON. RICHARD B. CHENEY, SECRETARY OF DEFENSE

BUDGET REQUEST

Senator Inouye. This afternoon we welcome the Secretary of Defense, Dick Cheney, to review the defense budget.

The President has requested $295.6 billion for the Defense Department, an increase of $5 billion over the amount appropriated for fiscal year 1989.

The amount requested is not sufficient to cover all of the inflation anticipated for fiscal year 1990. Nonetheless, it represents the 10th straight year of increases in defense spending.

Mr. Secretary, you have been appointed to your position at a very pivotal time. After many years of defense increases, tightening fiscal constraints require that reductions are made in our plans for defense.

IMPACT OF GLASTNOST

At the same time, the apparent thaw in the external policies of the Soviet Union could lessen the need for defense spending. To the extent that this thaw leads to arms reductions, it will have a profound impact on our national defense requirements.

Today, we are holding the last of 31 hearings. In addition to several hearings with witnesses from military departments, we have heard from our military field commanders and looked at our national security needs through their eyes.

We have heard from the Under Secretary of State and sought to understand how defense appropriations reflect our foreign policy and national security objectives.

These hearings have left us concerned that the coming pressures will not be easily dealt with; that the need for reductions in investment spending may cause disruptions in the Nation's industrial base; that the future requirements of such systems as the B-2, small ICBM, and SDI must be weighed within a much constrained budget; and that the training, health, and welfare of our citizens under arms must be our first priority in keeping our Nation strong.

We also recognize that solutions bring their own problems. For example, reductions in overseas force structure to reduce costs will strain our airlift and sealift assets.

Mr. Secretary, let me commend you for your willingness to confront the difficult issue of budget reductions. The budget you have recommended makes some controversial choices. You have recognized that the need to reduce future costs dictates program terminations. Unfortunately, as we all know, it is very difficult to find a program whose termination is universally supported.

Mr. Secretary, you have been thrust into the middle. You have our admiration, our support, and our sympathy. We look to you for leadership in this challenging era. Again, on behalf of the subcommittee, I welcome you, and we look forward to your comments.

But may I call upon the vice chairman of this subcommittee, Senator Stevens.

REMARKS OF SENATOR STEVENS

Senator STEVENS. Thank you, Mr. Chairman.

Mr. Secretary, I would adopt the statement made by the chairman. We welcome you.

I will be slightly hesitant to challenge any of the figures that you present to us for an obvious reason, because you have stolen our brains. They are sitting behind you there.

But I, too, congratulate you—I think we all do—for having made some very difficult choices. It will come as no surprise that we don't agree with all of them. But at least you have challenged us to make similar choices and commitments to the future of defense. We look forward to working with you.

We expect this to be a very agreeable period of working on a disagreeable basis of trying to cut back the modernization programs underway.

I do not feel that is timely yet, in view of the world conditions, but we have to do it. So we'll join with you.

Thank you very much, Mr. Chairman.

Senator INOUYE. I have an opening statement from Senator D'Amato that I would like to put in the record at this time.

[The statement follows:]

STATEMENT OF SENATOR ALFONSE D'AMATO

Thank you, Mr. Chairman. I'd like to add my welcome to Secretary Cheney and note the admirable job he is doing as the new man in the Pentagon in this year of severe budget restrictions.

I think the Secretary is well aware that I do not agree with certain of the program cuts he has proposed, in particular the F-14D production, but this is not a contest of wills or personalities. I respect him for his judgment and his unique experience of having been a highly respected member of Congress and now the head of the Defense Department.

Yet,disagreements such as ours are to be expected and are part of our democratic process. These questions are supposed to be worked out by the defense committees of the two houses of Congress. I am convinced the Secretary of Defense has done his job well, but now it should be our turn.

Thank you, Mr. Chairman.

Senator INOUYE. Mr. Secretary, please proceed, sir.

Secretary CHENEY. Thank you, Mr. Chairman, Senator Stevens, members of the committee. I do have a statement that I would like to submit for the record, if I might, Mr. Chairman.

Senator INOUYE. You may be assured that your full statement is made part of the record.

Secretary CHENEY. Thank you.

I do want to thank the committee for the fine services of Mr. Sean O'Keefe, now Comptroller of the Defense Department. He came to me highly recommended and he has lived up to his advance billing. He is here with me today.

SUMMARY STATEMENT

I have some opening remarks that I'd like to make, if I might, Mr. Chairman, by way of summary, and to focus upon what I think are a few key items. I will try to keep them fairly brief because I know the members have had the opportunity to go through extensive testimony already this year from representatives of the Department. I will try to summarize what I think are the high points, and then I can try to respond to your questions, your comments, and your concerns.

I have now been Secretary just a little over 3 months. My first official task as Secretary of course was to worry about personnel, and we are in the middle of doing that. But the second task was to find ways to cut $10 billion from the fiscal year 1990 defense budget, some $65 billion over the course of the Five Year Defense Program.

This was not an easy assignment.

As you mentioned, Mr. Chairman, we are in a period where we may, in fact, be on the verge of a fundamental change in international relations. We have seen significant modifications, if you will, of Soviet behavior, certainly clear-cut statements of changed intentions.

Just this week, Admiral Crowe has been in the Soviet Union. For the first time ever, the Chairman of the Joint Chiefs of Staff has visited facilities that no American has ever seen before. He has been out on a nuclear attack submarine, and watched Soviets operate naval forces at sea, and visited bases and facilities all across the Soviet Union.

There is a degree of cooperation now on those kinds of military to military contacts that, frankly, I would have never bet was possible just a few years ago.

While we see the prospects for significant political reform inside the Soviet Union, and we have seen elections in Poland, and we have seen the Hungarians just in the last week honor the leaders of the Hungarian uprising of 1956, we still, of course, have to be very cautious about how we proceed. While there would appear to be a clear-cut intention on the part of the Soviet leadership to reallocate resources away from their military sector to the civilian side of the economy, there has been, as yet, no significant reductions in their capabilities targeted against the United States. And, as Secretary of Defense, I feel that I have no choice but to operate based upon what we perceive to be Soviet military capabilities, not Soviet intentions.

Obviously, we would like to be able to anticipate changes down the road. We may, indeed, be able, in future years, to undertake a course of action that would allow for reduction in the level of commitments and efforts if we are successful at some of the efforts currently underway.

But now, more than ever, I think it is important for us to be firm and consistent in our purpose, to proceed in a measured way, to proceed on a negotiated basis within the framework of our alliances, which, after all, are the backbone of our success for the last 40 years.

Keeping all of this in mind, I would like to focus just for a moment, if I can, on the size of the defense budget this year and what our priorities were as we put it together.

I am confident that my predecessors found it much easier to put together budgets when we were in the era of ever-increasing defense budgets. I think there is still a public perception out around the country that massive increases in the defense budget are still underway. Of course, that is not the case.

In real terms, after inflation is factored out, this is the fifth year in a row in which we have had a decline in defense spending. At the beginning of the year, in January, President Reagan had recommended a 2-percent real increase for fiscal year 1990. President Bush came in with a recommendation of zero percent real growth. Ultimately, we ended up with an actual decline of about 1 percent.

Since 1987, that is, since January 1987, a little over 2 years now, reductions in defense spending over the period from 1988 to 1994 total $373 billion.

If you go back to 1986, the first year in which we had fiscal year 1990 included in the Five Year Defense Program, and you add up all the programs that Congress approved in 1986 and the President signed off on, and add up what the expected cost for those programs would have been in 1990, the total comes to $479 billion.

The budget we have submitted to the Congress is $305 billion—over $170 billion less than had been anticipated.

In light of that and the decisions that the Congress and the President have made, in terms of the overall ceiling on spending for next year, I had no choice but to make some very difficult cuts.

I think most of you know my record in the Congress over the years has been one of supporting virtually every recommended increase in defense spending. I voted for virtually every program in the budget. My problem now, of course, is that I have to figure out some way to pay for it, with less money than any of us had anticipated we would have at the time we approved those programs.

So, I was left with the proposition and the guidance of the President with the need to come up with ways to cut defense spending. I made a couple of basic judgments at the outset that I think are important, but that I hope you would all keep in mind as you weigh the recommendations that we have made to the Congress.

Specifically, I was concerned that we not try to preserve the fiction that somehow we could have all of those programs that we thought a few years ago we could have when we anticipated having $479 billion next year. I, therefore, made the decision that it was important in some cases to cancel programs, to terminate contracts, and to reduce force structure, and to take the difficult decisions that are involved in that, rather than come back to my former colleagues on Capitol Hill and suggest that there does not have to be any pain in these budget cuts, that there does not have to be any reduction in programs or cuts in anybody's bases, or shutdown in any production lines in order to make the budget.

The fact is it has been enormously painful, but I think those cuts are absolutely necessary.

The second thing I tried to do was to pursue the notion that there ought to be certain priorities in terms of evaluating the proposals that were put before me to meet the budget mark.

There were five specifically that I would like to mention.

PERSONNEL

First of all was personnel. Before I became the Secretary of Defense, I served for 4 years on the Intelligence Committee and spent a lot of time with our military forces around the world in that capacity. I have obviously talked a lot with both civilian and military leaders in the Department in recent months.

The thing that I am struck by time after time after time is their absolute conviction that the quality of personnel serving in the Armed Forces today is better than it has ever been before; that we have, in fact, been able to attract and retain the most capable, best qualified, best trained people to serve in uniform in the 1980s, thanks to the efforts of this committee and others than we have had in a long, long time.

But I also have the sense that that is a very fragile commodity; that we have a full employment economy; that we have a declining pool of 18 year-olds and that pool will continue to decline through 1994. There are a lot of opportunities for young men and women in our economy today besides serving in the Armed Forces of the United States.

I made the decision early-on that I was not going to take any action in connection with the budget that would lead to a situation in which it is more difficult to recruit and retain top quality people to serve in our Armed Forces. That was our No. 1 priority.

READINESS

A second, related, priority has to do with what oftentimes is referred to as "readiness,' but which I think is better evaluated as a people issue. When you go out and recruit first-class people to serve in the Armed Forces, and then you give them professional training, I think you have to give them the opportunity to practice that craft, that trade, if you will, those skills that they have acquired while they are there.

If you sit down and talk with a group of Navy pilots about why they serve in the Navy and why they continue to serve in the Navy, there is one factor that they all cite time and time again, and that's because they like to fly jets. To the extent that you make it more difficult for them to do that, that you reduce flying hours, that you make it less attractive for them to be able to practice their trade, they'll depart. They'll find other options and other opportunities.

That is a readiness measure.

Training, operations tempo for armored crews and tanks, all of those kinds of issues I viewed as people questions, to a large extent, and, therefore, we tried to maintain the readiness of those forces.

FORWARD DEPLOYMENTS

A third item, which the President emphasized, was that he wanted to preserve our forward deployments; that at a time when we have embarked upon a fairly aggressive strategy of engaging the Soviets in arms control, especially with respect to conventional forces in Europe, it was extremely important that we not take down unilaterally for budgetary reasons those forces that we have deployed overseas.

You'll find, with one small exception with respect to some 4,000 slots in Europe, that we did, indeed, preserve that forward deployed force structure. We did not reduce it, and we have recommended a budget to you that would, in fact, maintain it overseas.

STRATEGIC MODERNIZATION

A fourth item that was crucial, of course, was strategic modernization, which I can go into at greater length, and I am sure it is a subject the committee would like to discuss. Specifically, we wanted to continue to emphasize upgrading our strategic capabilities. That's true whether or not we are successful in negotiating a Strategic Arms Reduction Agreement with the Soviets. If we have smaller nuclear forces than we have today, they are going to have to be the most capable we can deploy, and we are far more likely to be able to get a good agreement with the Soviets if it is clear that we are prepared to move forward in terms of modernizing our forces.

So, the Trident program is intact, and I think relatively noncontroversial, functioning very well. We decided to go forward with the two missile program, the small ICBM and the rail garrison system, primarily because we think it is important to build mobility into the force, to preserve the strategic land-based leg of the Triad into the next century. We also feel it is extremely important as we enter into negotiations with the Soviets in the same area when they are also deploying two mobile systems.

B-2 PROGRAM

Finally, in the strategic modernization area of course is the B-2, an enormously controversial proposition.

I will take just a minute and talk about the B-2 because I think it is an important system. I approached it with a healthy degree of skepticism. When I went before the authorizing committees earlier this year in both the House and the Senate, I made it clear that I was not comfortable at that point that I had a handle on the cost numbers with respect to the B-2 bomber.

On that basis, I directed that the Defense Acquisition Board undertake a study. I've spent a lot of time on the subject myself. I've been out and visited Northrop and spent time with my senior staff reviewing the B-2 program.

I am persuaded, based upon that review, that the B-2 is indeed an important asset that we ought to go forward with; that we have funded nearly $20 billion in R&D to build a system that is truly a revolutionary new concept in aviation, which has enormous capabilities, both in a nuclear and conventional role and is going to be vital for us in the years ahead.

I would be happy to get into details to the extent my former colleagues want to do that.

One thing I emphasized during the course of that review, though, was that I did not want to come to the Congress and give you numbers and argue that we had absolute conviction and assurance in those numbers unless I had absolute conviction and assurance on those numbers.

The defense business is the only one I've ever come across where we are expected to produce, to the penny, accurate cost estimates of what a program is going to cost over its 10- or 20-year life without ever having produced or flown the system that we are charged with building. But that is what has been attempted in the past, oftentimes. Of course, because we are responsible for the taxpayers' dollars, we want as much specificity as possible.

The fact of the matter is the B-2 has not flown yet. We think it will fly shortly. We are moving through that process, and I would expect that we would have test flights underway before the end of summer.

We think the numbers that we have given you in terms of the cost of the program are accurate. They are accurate to the best of our ability to make them accurate.

But, until you fly it, until we have had an opportunity to run several missions with it and we get some more experience with respect to the actual production runs that are now underway, there is going to be still an element of risk in the program itself.

So we have given you numbers that are the best we can give. There is always the possibility that there will be some slippage there. In a spirit of candor with the Congress, I want to make certain that everybody understands that is a possibility.

I don't think it's going to happen. But, as we get more experience under our belt, we'll be able to firm up to an even greater extent those numbers that we have given you on the B-2.

PRODUCTION AND PROCUREMENT

A final, fifth, priority that I considered as I put together the budget was the question of efficient rates of production and procurement.

One of the key requirements the President has levied on me is to see to it that we implement the recommendations of the Packard

Commission and follow through on the congressional mandates embodied in the Goldwater-Nichols Act and that we try to do a better, more efficient job of running the acquisition and procurement process at the Defense Department than has been true in the past.

For the last several months, I have had a team working to prepare a set of very explicit plans for that purpose. We presented that plan to the President this week, and shortly we'll have his sign-off on it. Then we'll set about implementing it.

I decided at the outset that it was foolish to talk about reforming the procurement processes in the Pentagon if the first thing I did in putting together a budget was to accept the recommendations that were made to me to stretch out the procurement of several major weapon systems.

The argument, of course, is that we could keep everything in the budget if we simply stretch out the buy and reduce the rate at which we procure various key systems. This is true. You can keep everything in the budget if you stretch out all the buys. But what you do is raise the cost of every single thing you buy because you run the production lines at inefficient rates.

In responding to the need to cut the budget, recommendations were made to me, for example, to produce fewer Apache helicopters, to run at a slower rate.

The result of that was to raise the cost of every Apache helicopter from $12 million a copy to $19 million a copy. I rejected that proposition. And fairly consistently across the board, with a few exceptions, where we were dealing with complicated new technologies, where, for one reason or another, like with respect to the B-2, where I thought it was important for us to get more testing experience before we increased the rate of production. I did not delay or defer programs. I made decisions to shut down production lines, rather than the notion that we ought to keep all of them open forever, at very inefficient rates.

The same is true for the F-14D, another very controversial decision. But we were producing those aircraft at one per month, a very expensive way to run an operation. For this reason, I made those kinds of decisions.

I did not feel that I could, in fact, be successful at trying to improve Pentagon management if one of the very first decisions I made was to increase the price of everything we buy. This, in fact, is what I would have had to do to buy those and accept those recommendations to stretch out procurements.

If you look at the overall thrust of the effort, I think you will find that it is a generally sound budget. I cannot claim any special wisdom in terms of having put it together. I am certain the Congress can find ways to improve upon the product we have provided.

There is no monopoly on wisdom about how these programs ought to operate. I certainly would not want to claim that the first budget I have ever prepared as Defense Secretary is the finest piece of work ever seen by this committee. But I think it is a good product.

We did, in fact, work very hard to put it together. Ordinarily, the Deputy Secretary presides over the Defense Resources Board that makes these decisions. This year I presided over it myself because I wanted the hands-on experience of constructing that budget by myself. For that reason I did so.

By way of closing comments, I would hope that the Congress, in weighing the package that has been put before you, would be prepared to make the same kinds of difficult decisions that we have offered up. This is to say that I cannot claim that all the decisions we made were the right ones. I know they were tough ones and that it would be a mistake to put hems back into the budget based primarily upon considerations of what kind of economic impact that has domestically at home instead of items that are geared to a broader national strategy.

I think it would be an even more egregious mistake for us to do things such as cut pay and benefits for the troops or to reduce those items that are key to our ability to attract and retain first class people in order to put back some systems that perhaps are marginal or not priority, or that, in fact, ought to be cut.

So, Mr. Chairman and members of the committee, I urge your favorable consideration of the product we have provided. I know they are difficult decisions, and I have had a number of discussions with you over the months and with my former colleagues in the House.

I think it is a good package, and I would look forward to having the opportunity to work with you not only this year but in the years ahead to do an even better job than we have in the past of providing for the Nation's defenses.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF RICHARD B. CHENEY

Mr. Chairman, Members of the Committee:

It is a pleasure for me to come before this committee to discuss the amended defense budget for FY 1990/FY 1991. Although there is some disagreement on some of our decisions, I think the Congress appreciates the difficulties we had amending our request and I hope it agrees on the concept of stability and predictability in defense funding. The timely enactment of the FY 1990 Budget Resolution at the levels agreed to in the budget summit is a welcome indication of congressional support.

Today I would like to express my concerns on a number of budget issues critical to our nation's defense. Before I discuss these concerns, it is appropriate to comment on how we are taking advantage of the international political changes to enhance peace and stability.

INTERNATIONAL CONDITIONS

Since I last testified before the Congress on the budget request, we have seen even more changes take place on the international scene; some very positive and others very troublesome. Some would suggest that these positive changes have already reduced the threat to our security and we can therefore afford to reduce our vigilance and allocate fewer federal resources to defense. This presumes that ongoing changes will continue and that they will be lasting changes that are not reversible.

However, as was so tragically seen in China, crises can arise quickly and even the most far-reaching reforms can be rapidly reversed. Such reversals can occur even in spite of the desires of the general population and many government leaders.

We hope that Mr. Gorbachev's proposals and rhetoric produce fundamental and lasting changes in the Soviet Union's relationship with the rest of the world. In addition, we hope that reforms like those in Poland and Hungary will lead to governments that are more democratic and that other nations, such as Nicaragua, North Korea, and Vietnam will pursue reforms that will lead them into democracy. Such changes would contribute to reduced tensions and greater stability around the world.

However, we should not react unilaterally to political rhetoric and proposals that have not been fully implemented or which can be easily reversed. It would not be prudent for the United States to change its strategy or doctrine in the face of the large number of uncertainties which still exist.

Despite Mr. Gorbachev's stated commitment to a defensive military doctrine, the Soviet Union continues to improve its forces. While some military units and equipment have been withdrawn from Eastern Europe, we have not yet seen the other promised changes in Soviet force structure. The Soviet military is still the largest in the world and will remain so even after the unilateral reductions Mr. Gorbachev has promised take place over the next two years. We seek to redress current imbalances where the Soviet Union outnumbers our forces by negotiating agreements that provide for a more stable balance at lower levels of forces.

In this regard, our caution in response to Soviet proposals and initiatives and our desire to negotiate far-reaching and long-lasting force reductions is proving very successful in improving stability and reducing many of these uncertainties. President Bush's recent proposal, adopted by NATO, for expedited conventional force negotiations in Europe is aimed at accelerating the arms control process to take advantage of current trends and this window of opportunity to improve mutual security in both the East and the West. We have also resumed the START negotiations with new vigor and just recently concluded an agreement with the Soviet Union on the prevention of accidental confrontation. Clearly, this administration is committed to changing the international environment. We seek to move beyond containment to a new era that is more conducive to economic growth and improved relations.

U.S. security policy must maintain the commitment to peace through strength: our forces must be structured to meet a myriad of contingencies and risks and be able to respond to threats across the full spectrum of conflict. To ensure its success, we are seeking to develop, in consultation with the Congress, a national consensus on security needs.

BUDGET PRIORITIES

For the second straight year we have started the congressional review of the defense request with an agreed-to funding level. The bipartisan agreement with the Congress in April set defense budget authority and outlays for FY 1990 at $295.6 billion and $289.8 billion. Reaching early agreement is tangible evidence that the budget process can work properly. But, achieving the cuts to meet the new targets wasn't easy. Additional reductions required to meet this new level brought the total reductions made to the FY 1988-FY 1994 defense program since January 1987 to $364 billion, $64 billion of which was cut since January of this year. We must realize that the FY 1990 budget agreement represents the fifth consecutive year of decline in defense budget authority adjusted for inflation.

These continuing resource constraints have made it very difficult to maintain a convincing and effective deterrent. Our challenge was to allocate declining defense resources in a rational and cohesive way and to support our forward strategy. It was imperative that we keep top-notch people filling the ranks, ensure that our force remained at a heightened state of readiness, and that our modernization program continued to take advantage of the latest technology.

The program adjustments necessary to meet this challenge did not involve any easy choices. We had to be very careful that the choices we made did not compound our problems by reducing the capabilities of our forces during these critical times And some of our choices have proven unpopular to some.

But the need to maintain effective and credible forces demanded that we make the hard choices. More importantly, however, we had to make the right choices. Therefore, I set definitive priorities to guide the budget adjustment process for the FY 1990-FY 1994 defense program: quality people; readiness and sustainability; effective procurement; and strategic modernization.

Personnel and Readiness

The well-being and readiness of our uniformed personnel continue to be my highest priorities. Therefore, the FY 1990/FY 1991 budget provides competitive military compensation (3.6 percent pay raise in FY 1990 and 3.2 percent in FY 1991), adequate family support programs, reasonable living and working conditions, and enhanced education assistance. Since the readiness and sustainability of our forces are interrelated with quality personnel, we were determined to maintain a high state of training, provide necessary medical support, and retain adequate logistical support. The budget request maintains a high level of training readiness and operational tempo. To protect the quality and readiness of our forces, we elected to downsize the force structure and manpower levels rather than short-change personnel across the board.

Acquisition

Efficient acquisition is critical to efforts to improve the power and mobility of our conventional forces. Therefore, we are continuing emphasis on Multiyear Procurement and production of high priority programs at economic rates of production. We plan to continue production of several key systems at or near the rates included in the January budget. In addition, research and development funding will provide for significant efforts in basic research and exploratory technology to maintain the qualitative edge in our forces.

In making the necessary adjustments to protect efficient acquisition of our weapon systems we were determined to avoid cost increases associated with stretching out a large number of programs. This could only lead to additional stretchouts in future years, adding even more inefficiency and cost to our modernization program.

Therefore, we had to cut a number of programs that offered potential, but that we could not afford at this time. In short, we elected to kill a few big programs so that the remainder could proceed at economic rates of production. In addition, a number of development and production programs were rescheduled. The choices may not be popular, but they are preferable to the high cost, stretchout syndrome.

Strategic Programs

It is imperative that we continue the commitment to increase the survivability and endurance of our strategic forces. To support this priority, the budget supports continued strategic modernization within the current fiscal constraints. The amended request supports our decision to add mobility to some of our land-based missiles by redeploying 50 PEACEKEEPER missiles from silos to trains. Consequently, we included $100 million in FY 1990 and $200 million in FY 1991 for the small intercontinental ballistic missile.

The goal of the Strategic Defense Initiative remains unchanged, so it was a particularly difficult decision to reduce the program by $1.0 billion in FY 1990 and $1.3 billion in FY 1991. Even at these constrained levels, our program will continue development of a system that will meet the requirements of Phase I by focusing on evaluating the potential of the most rapidly advancing technologies such as "Brilliant Pebbles."

Following a detailed review that I conducted with my senior management team, I have decided to continue the B-2 program. The pace we are recommending reduces concurrency. Even at its currently estimated cost of slightly over $70 billion in then-year dollars, this program is well worth its price in consideration of the specific strategic capabilities it will provide and its contribution to the development and exploitation of "stealth" technology generally.

These priorities were developed and the necessary adjustments supported by recommendations from the Military Departments, the Joint Chiefs of Staff, and the Commanders-in-Chief of the Unified and Specified Commands. It is critical that the priorities be sustained during the congressional budget review and I urge the committee to support this consensus program.

BUDGET STABILITY

The success of our efforts to provide the necessary resources for defense and the effective management of those resources depends primarily on achieving long-term stable and predictable defense funding. The erratic increases and decreases in funding during the past 20 years have disrupted defense planning; led to substantial inefficiencies in program execution; caused defense industrial capacity problems; and produced unwarranted cost increases. Our efforts to develop a cohesive, long-term program are aimed at bringing much-needed stability to the budget process as well as the funding levels themselves. However, the success of setting defense funding on a stable course is made more difficult by the fact that the FY 1990 budget marks the fifth consecutive year of declining growth in defense funding.

We need congressional support for stable defense budgets that are logical within available resources, but also consistent and coherent over the long run. The two budget summit agreements have demonstrated the wisdom of early agreement between the Congress and the Administration on the total level of defense funding. But stability will not come with only one budget. In this regard I'm pleased to hear that serious consideration is underway for reaching multi-year budget agreements. The maximum benefits of budget stability will be achieved only if future agreements include topline defense budget levels for extended periods and these levels are supported throughout the authorization and appropriations review process.

Full implementation of two-year defense budgets would provide resource stability necessary for economic program execution. In support of this important initiative, the Department has fully implemented a 2-year planning, programming, and budgeting cycle. The Congress has generally supported the concept of biennial budgeting and has required DoD to submit two-year budgets. Movement toward topline agreements in the budget resolution is a very heartening sign. Progressively, we may begin to see the true benefits and efficiencies of budgeting beyond a single fiscal year.

Program funding stability contributes to more effective long-term planning and lowers total program costs. We must make greater use of Multiyear Procurement (MYP) so that we can provide for larger, more economical lot buys. Even though fiscal constraints necessitated some adjustments to the program, the FY 1990/FY 1991 budget includes 27 programs for MYP. Program stability is also enhanced by ensuring that, wherever possible, systems are produced at economic rates to make effective and efficient use of existing manufacturing plant and facilities.

BUDGET AUTHORITY AND OUTLAYS

One issue that has received much attention during the congressional review thus far is not a programmatic issue, but rather a technical issue involving the relationship between budget authority and outlays. The CBO estimated that DoD outlays for FY 1990 will exceed the level in the budget agreement by $3.8 billion and that unless this difference can be resolved, further reductions will have to be made to budget authority. Alternatively, the program mix must be adjusted to match the outlay target.

This issue threatens to distort congressional decisions on the Department's recommendations for program terminations. Some believe that the necessity to reduce personnel and operating accounts to meet the CBO estimate will free up budget authority to be applied to relatively slow spending acquisition programs. This creates the illusion that programs we recommended for termination can be restored painlessly. Moreover, national security program decisions based on this logic to redress an accounting disagreement are sharply at variance with the deficit reduction goals articulated in the budget summit agreement.

This approach ignores the long-term impact of such restoration. Decisions to terminate some programs were not made solely, or even primarily, for their impact on FY 1990. Savings achieved in FY 1990 through program terminations total $2.7 billion, but these decisions also yield an $18.3 billion reduction through FY 1994. Restoration of these programs would completely disrupt the relationship between budget authority and outlays for years to come.

Outlay estimating is not a precise science--and therefore--a poor basis for a major realignment of defense programs and priorities. The Department believes that this budget authority/outlay mismatch can be resolved without restructuring the long-term defense program particularly since the estimates are at variance by just over 1 percent. It would be unfortunate indeed if the Congress were to take drastic action in FY 1990 to resolve a problem that does not exist and thereby add billions of dollars to budget authority and outlay requirements in future years, disrupt defense planning and programming, and aggravate future deficit reduction efforts.

DEFENSE MANAGEMENT

Stability is an integral part of effective management, quality performance, and affordability of defense acquisition. But stable funding by the Congress is not enough. We must have well-considered program requirements, properly trained and efficient acquisition staff, and a stable legislative and regulatory environment to produce better systems at lower cost. Therefore, in addition to promoting budget stability and predictability, we are moving to improve the management of our acquisition program.

The President directed a Defense Management Review to implement fully the recommendations of the Packard Commission and develop recommendations to improve the management of our acquisition program. Our goal is to develop a plan to eliminate unnecessary management layers, streamline defense regulations and laws, improve the quality and efficiency of acquisition personnel, and use more commercial-style competition, off-the-shelf systems and subsystems, and services available in the private sector.

CONCLUSION

The priorities of the FY 1990/FY 1991 budget support a steady course, both politically and fiscally, enabling us to seize favorable opportunities to improve relations with potential adversaries, but remain ready in any event to secure our national interests. We have made the necessary adjustments to our program to accommodate the latest funding reductions with these opportunities in mind--and the adjustments we've proposed were designed to address current and out-year funding constraints. I urge the Committee to adopt this long-term view.

I seek your support of our revamped program as well as the agreed-to Topline during your review. The Congress and the Executive branch working together, with creative and cooperative approaches, can meet the challenge of redirecting scarce defense resources to the most urgent and productive requirements.

FORCE REDUCTIONS

Senator INOUYE. I thank you very much, Mr. Secretary.

In the past 6 months, Mr. Secretary, we have all experienced extraordinary events throughout the world. Some were very surprising events, such as the unilateral withdrawal of conventional forces from the Warsaw Pact nations by Mr. Gorbachev, the elections in Poland, the memorial service in Hungary, the visitations by Mr. Gorbachev throughout Europe, and his popularity with the Poles.

Many Americans are now suggesting that maybe the time has come for the United States to reciprocate by making significant reductions in our defense spending. What are your thoughts, sir?

Secretary CHENEY. Mr. Chairman, like many Americans, I am encouraged by what would appear to be a Soviet willingness to enter into significant arms reductions—not only discussions but actual reductions. As evidence, of course, you can cite the INF agreement, where the United States and the Soviets agreed to eliminate an entire class of weapons.

If you look at the Conventional Force Reduction Talks underway, I am encouraged in part because, when NATO tabled our original offer, we tabled a proposal that placed limits on artillery, armored personnel carriers, and tanks.

The proposal that the Soviets have now come back with basically adopts our numbers in two of those categories, armored personnel carriers and tanks, and comes very close with respect to artillery. What it involves in the category of tanks, for example, is a reduction of some 30,000 Soviet tanks and a reduction of about 2,500 NATO Alliance tanks, significant asymmetrical reductions down to the level of parity in conventional forces.

This is phenomenal, if we can achieve that.

What the President, of course, has done is to go back with his proposal at the NATO summit and incorporate for the first time a willingness on the part of the Alliance to offer limits on aircraft, helicopters, and manpower, which we previously had not been prepared to do.

But it would appear that the broad outlines are there for a significant reduction that would eliminate the Soviet superiority in conventional armaments that has been a fact of military life for 40 years in Europe, that would place us at levels approximately 15 percent below current NATO levels in those basic weapons categories in Europe, and obviously offers the prospect of some savings in that regard.

SECURITY VITAL

While we are all interested in the possibility of reducing defense spending—I guess I would offer two suggestions. One is that our major concern has to be security and has to be a more stable, if you will, and potentially a more peaceful world. We should not sacrifice issues that affect the stability and security on the altar of budget considerations. But we may well be able to derive some budget savings long term out of this process.

The second point I would urge is that this is a long-term process; that, while we see evidence now of intentions on the part of the Soviets to reduce armaments, and while I believe that Mr. Gorbachev, if he is going to be successful in his economic endeavors, has only one place to go for the resources to carry these out and he has to reduce defense spending, this is going to take a period of years. It is not something that is going to happen immediately.

For us, for example, to make decisions on reducing spending on fiscal year 1990 based on the hope that in the mid-1990's we'll be able to draw down our force levels in Europe seems to me would be very risky business.

I do think we can begin to look perhaps long term in terms of planning how we might restructure our forces in the future if, in fact, such agreements are ultimately negotiated. But for now, I think it would be extremely unwise for us to seek short-term financial relief in the hopes that we are going to make long-term reductions in weapon systems on both sides.

SICBM/MX

Senator **Inouye**. Most of the military commentators, I believe just about every Member of the House and Senate leadership, both Democrat and Republican, have suggested that the administration is in grave trouble on the proposal that you have submitted on the mix of small ICBM and the MX rail garrison.

Why not just the small ICBM? Why not just the MX? Why the mix?

Secretary **Cheney**. Mr. Chairman, I think the key is, of course, that they give us different capabilities.

The MX missiles, the Peacekeeper missiles, are already deployed in silos. The cheapest, lowest cost option for getting mobility in the force at the earliest possible date is to take those missiles, those MX missiles, and put them in rail garrison. If we do that, we can have an operational capability by 1992 for rail garrison.

The small ICBM is a longer range proposition. We have just begun to test fly the missile. We have a lot of work yet to do to get the system ready. The proposal that we have come up with in effect sequences it. First we would go with rail garrison; second we'd go with the small ICBM.

The funding is as much as anything a consideration in the way we put together the package; that is to say, if you're going to go with two, you have to stretch them out over time.

But, of course, the rail garrison system is a large, 10 warhead missile. It is our most capable land-based system. For all the years that I served in Congress we had debates over how we're going to find a survivable basing mode for MX. And we finally did in the rail garrison mode.

It does give us a significant capability.

The small ICBM would give us additional capability though as a single-warhead missile, it is going to be much smaller than the Peacekeeper. It is going to be mobile, in a hardened mobile mode. The Peacekeeper will not be hardened in rail garrison.

Ultimately, we are likely to have to replace our existing force of land-based missiles. We have 950 Minutemen out there—450 Minutemen II and 500 Minutemen III. Those are all relatively old and, ultimately, are going to have to be replaced if you are going to preserve the land-based leg of the Triad.

We think going with the combination of the small ICBM and rail garrison is the best way to go to give us maximum capability. It also is probably the best way to go from the standpoint of giving us leverage in the START talks vis-a-vis the Soviets. They have two mobile systems, the SS-25 and the SS-24. Frankly, we think it also offers the best prospect of breaking the deadlock that for 10 years has kept us from making the decision as a government on how we are, in fact, going to deal with modernizing the land-based leg of the Triad.

So, when you put all those factors together, the President made the decision, and I think it is the correct one and we all support it, that we ought, in fact, to go forward with both systems.

Senator INOUYE. Thank you very much, Mr. Secretary.

Senator Stevens.

FORCE REDUCTIONS

Senator STEVENS. Thank you, Mr. Chairman.

I am constrained to say this committee voted to put the MX on rail 5 years ago, and it looks like we are going to go back now and do what we suggested to your predecessor that we should do.

Let me, however, turn to some other things.

Again, Mr. Secretary, we, and I particularly, have great respect for you. I know of the extent, even before you became Secretary, that you were pursuing studies concerning the Soviets, their policies and their tactics. I think that you have analyzed your budget from the point of view of a lot of the negotiations that are going on. We, above all people, ought to take that into consideration to make sure that you have the maximum strength as you go to that bargaining table.

But all of the force structure reductions are taken from the United States. Even the INF forces that are being reduced are being left in Europe. We are losing one Army mechanized brigade in Fort Carson, Army attack helicopters and crews, 73 P-3 aircraft, an aircraft carrier, 7 destroyers, 2 tactical fighter wings, and 4,000 Army personnel associated with the elimination of the Pershing II's will be left in Germany.

It does seem to me that, if you balance that against sending out the Air National Guard and the Air Force Reserve squadrons, and the fact that there are no suggested force reductions overseas, we are paying for this reduction in terms of force structure with our mobile force at home and leaving our Maginot Line in Europe.

Now, I thought there should be some balance there, too. But you disagreed.

Could you tell us why.

Secretary CHENEY. Senator, we did take approximately 4,000 out of Europe. The basic thrust of what we did, though, was to not take them out of those forward deployed forces.

The overall guidance was the President's, that it would be inappropriate, especially as we embark upon a round of conventional force reduction talks with the Soviets, for us to begin unilaterally pulling down those forces in Europe; that it would eliminate the leverage that we have in the process.

Another reason I would argue why we have to be careful about how we deal with those forward deployed forces is the Alliance.

We are at a period when cohesion and unity within the Alliance is more difficult to maintain than at any time in our recent past.

It was very easy to keep everybody focused upon the problem and committed to the Alliance and operating in unison when the Soviets would periodically, as they have in years past, invade Hungary, invade Czechoslovakia, and invade Afghanistan.

With the removal of the perception of a threat, it is more difficult than ever before to keep everybody moving in the same direction with respect to NATO. What we do by way of our commitment to NATO and our force structure in NATO we think has to be handled very carefully.

The President has proposed a significant reduction, 30,000 American troops out of NATO, and a 15-percent reduction in aircraft, helicopters, tanks, et cetera. But he has done it within the framework of the NATO Alliance. He has tabled that proposal at the NATO summit with his fellow Western leaders. The proposal is being worked up by a high-level task force within NATO. It will be tabled at Vienna.

I think, given the political circumstances of the time, given the ferment that does exist, given the shifting tides of public opinion in Western Europe and in the United States, it is important that the U.S. commitment to NATO remain firm and be modified only in conjunction with the negotiations that are currently underway, rather than unilaterally for budget reasons.

What we did do on the 8,000 slots that have been part of the Army's share of the INF forces is we took down half of those from Europe, 4,000 slots. The other 4,000 were left over there to fill out billets that the Army deemed to be very important and that SACEUR, General Galvin, felt were very important, in especially the combat support roles.

The other 4,000 had to come out of some other place, in terms of taking down the total 8,000 slots that were associated with the INF. The Army recommended to me the withdrawal of the brigade from the Fourth Mechanized Division at Fort Carson. That is the one that we decided to take down.

I think that is the right strategy. Obviously it is a debatable strategy. I think it would be a mistake for us to take down all of our forces overseas and reduce our reliance upon that forward deployed strategy that has been so successful for us over the years, unless we do it within the framework of negotiations with our allies and with the Soviet Union.

EUROPEAN FORCES

Senator STEVENS. It is a debatable strategy, and you have good reasons for what you did.

However, we sit here with memories that in 1979, I think, we had about 260,000 people there, and Mansfield was offering his resolution of 150,000 people in Europe. At the time, we drew a line in the sand with one of your predecessors and we had 360,000 people there, including the Navy. Then the Department said let's not count the Navy, and we suddenly turned around and found there were 367,000, not counting the Navy. And they become sacrosanct to our Allies without regard to the fact that our commitment is not in troops; our commitment is to defense.

You know, it may be specious, but I still remember what someone told me once, that Eisenhower said we should put a platoon of WACS on the border of Germany and tell the Soviets if they touched a hair of one of those American women, we'd be at war. He thought that was sufficient.

Now that was our Supreme Commander at the time.

We continue to build up those forces at great cost because of the difference in support. I'm sure you know the difference in support of family, dependents, and personnel over there.

I really think that somehow or other, we ought not to make the mistake of leaving troops there and bringing them home under a commitment for reduction, which, as I understand it, means standing them down after they come home, as compared to readjusting our alignment of forces so that we can have the sufficiency we need in the Army when we are through with this go-around.

I am particularly worried about the Pacific.

Have you been to the Pacific recently?

Secretary CHENEY. I was last out there 2 years ago.

Senator STEVENS. Well, I hope that you can take a trip there and make up your own mind whether we are right, some of us, in saying that this new century will be the century of the Pacific. If it is, the place where the Soviets are going to show their flag after all of the negotiations in Europe will be the Pacific, but we won't have a flag to show because we're going to make the reductions vis-a-vis the balance in Western Europe, and, as I understand the negotiations, these don't even count toward their deployment of 55 divisions opposite my State in the Soviet far eastern Siberia.

We have less than a division in Alaska and less than a division in Hawaii now. We have two divisions in the Pacific; they have 55 divisions in the Soviet far eastern Siberia alone, not counting the ones that are over there, just across the Urals, coming eastward.

I really think we have to look at this overall deployment from the point of view of the sufficiency. Once the European negotiations are over, we still have the Pacific round coming sometime.

I think we are not going to have the balance.

I have just one more question, Mr. Chairman, and that is about my favorite subject.

The chairman says that he is not going to ask any more questions about the V-22 because the Osprey has been sort of a fixation for this Senator since I really discovered that it was new technology, a really new concept of technology that can only be proven by the military.

Rather than get into all the questions I have asked the people who have appeared for your Department, let me ask you this.

Is there any mix of private support for the research that is ongoing and necessary to prove the V-22 that would make you reconsider the V-22 position?

What I am saying is this. Suppose we could get civilian aircraft people to come in and say we think that is new technology, too, we'd like to join the Department of Defense now, at this research phase, and support it because it does have both a defense and a civilian application potential, although it is still in research and development—research, basically. But your decision terminates that new technology. I fear it will flee to Japan or to Europe, and the time will come that we will soon be buying that concept of tilt rotors from our allies to meet our Marines' needs, when it could be a new addition to our basic industry that does have export capability left; that is, our aircraft industry.

Have you explored that? Would you explore that?

Secretary **Cheney**. Senator, I certainly would explore anything that was suggested to me by the Congress. We made a recommendation that was based strictly on affordability.

I am not a critic of the V-22 in terms of technology. I think it does offer interesting prospects. We have invested money in it. We now have had a successful flight, the first initial successful flights.

If I had the money, I'd love to buy the V-22.

My problem was in trying to set priorities and find something to cut. Anything that puts money back in, of course, for 1990 is a real problem, because the 1990 outlay ceiling is so tight.

So if the Congress, in its wisdom, finds some way obviously to accommodate that, I will clearly be bound by whatever Congress does. But we are always happy to look at proposals.

I do not want to create false hopes. I made the decision I did. It is a recommendation to the Congress. It is up to the Congress to decide now what the next step ought to be.

Senator **Stevens**. Thank you.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Johnston.

Senator JOHNSTON. Thank you, Mr. Chairman.

Welcome, Mr. Secretary.

Secretary CHENEY. Senator.

Senator LEAHY. Excuse me, but would you yield?

Senator JOHNSTON. Yes.

STATEMENT SUBMITTED BY SENATOR LEAHY

Senator LEAHY. I would ask unanimous consent, Mr. Chairman, that a statement of mine and some questions be included for the record.

Senator INOUYE. Without objection, it is so ordered.

Senator LEAHY. Thank you, and thanks, Bennett.

[The statement follows:]

STATEMENT OF SENATOR PATRICK LEAHY

Secretary Cheney, good afternoon and welcome. There are a number of details in the defense budget that I would enjoy discussing with you today. But, I came to this hearing today to talk primarily about one issue, the stealth bomber.

Mr. Secretary, you recently completed a review of the B-2 program and I understand you decided that the plane is worth the cost. I supported the stealth program for a number of years. In fact, one of the reasons I opposed the B1-B was because I favored a stealth bomber. Well, I never said that we should write a blank check for the B-2, and I certainly never said we could afford two new bombers at a combined cost of more than $100 billion dollars. Two hundred and thirty two bombers at a cost of over $100 billion dollars. That is not a smart allocation of resources.

The B1-Bs are now on station at Dyess Air Force base but they still are not yet fully operational. The planes have been plagued with problems and this year DoD requested another $1.8 billion to fix the B1-B. This brings the program total to $30 billion.

Mr. Secretary, you just wrestled with your first round of cuts from the defense budget. That will be nothing compared to the fight you will see when the bills come in the mail from Northrop for the B-2.

Mr. Secretary, you have compared the stealth bomber with the Trident program. But to me that is like mixing apples and oranges. The Trident represents the entirety of the sea-leg of our nuclear triad. The stealth would represent about one-third of our air-breathing leg. Trident submarines are on station now and doing the job they were designed for. We've already sunk at least $15 billion in research on the stealth and the plane has not even been flight tested yet.

I continue to support efforts to improve stealth technology. The Air Force already has a number of operational stealth fighters and should continue intensive research on stealth technologies and applications.

However, over the next few weeks, I intend to carry out my own review of the B-2. I am not sure the added operational capability of this plane is worth the amount of money we are spending. At $70 billion and rising, I can't see how this program can ever be affordable.

AMBASSADOR-AT-LARGE

Senator JOHNSTON. Mr. Secretary, last year we passed legislation—you are probably familiar with it—requiring the appointment of a burden-sharing Ambassador-at-Large. I understand that he is going to be appointed soon. Is that correct?

[The information follows:]

The State Department is currently considering nominees for a burden-sharing Ambassador at large. A name is expected to be submitted soon.

Senator JOHNSTON. I hope that will be done soon because the law requires it and we are interested in it.

Senator HOLLINGS. We can't even find regular ambassadors, so what about this. [Laughter.]

Senator JOHNSTON. Defense Minister Lee of South Korea I understand has written you, asking that he be given prior notice, prior to initiating any plans for withdrawing troops from South Korea. He says, among other things, that, "The U.S. military presence in the South is the only guarantee of peace."

General Lee added that the "U.S. withdrawal would substantially increase South Korea's defense spending burden from 5 percent to 8 percent of the gross national product." They would be up there with us if we withdrew.

In any event, some of us on this committee think that no such assurance should be given; to the contrary, that conversations ought to begin, that negotiations ought to begin leading to a phased withdrawal from South Korea.

I have a letter to you signed by four of our members, which we'll give to Sean, so stating.

Don't you think, after all this time, it is time to begin those negotiations to withdraw from South Korea?

Secretary CHENEY. Senator, we, at present, have no plans or intentions to reduce our commitment to Korea. It is possible, of course, just as there is now a proposal to reduce our troop level in Europe—the President tabled a proposal for a 30,000-man reduction—that such a proposal would ultimately be developed in connection with Korea.

But, again, I guess I would come back to the notion that you need to consider it within the framework of what is going on in the Pacific, consider it within the context of our alliances, our obligations, and responsibilities there.

I think that commitment has been very important over the years. I think it has been one of our very successful deployments. I cannot say that it is absolutely fixed for evermore and will always be that way. But we currently have no plans to change it.

STRATEGIC DEFENSE INITIATIVE

Senator JOHNSTON. Well, as you may know, there is a lot of interest in this committee on it, and if Senator Bumpers comes back, I am sure he will want to inquire into that further.

Mr. Secretary, there are a couple of ways to break the ABM Treaty. One is to break it by its terms, to deploy a weapon or make a test that violates it by its terms. Another is to announce a decision when evinces an intention to get into full-scale engineering development of a system.

Now, a number of us who are friendly to robust research on SDI are very concerned that one of these major decisions will be made without our knowledge, without our involvement—for example, funding a test, or entering into a decision for full-scale engineering development in which we are not involved, using the funds appropriated, I won't say for other purposes, because they are appropriated generally for SDI.

Now, I gave to General Monahan when he testified here some suggested language of an amendment which would, in effect, say that the Department of Defense may not do these various acts involving testing, et cetera, or a decision for full-scale engineering development which would have that effect without conferring with the Congress.

Would you be willing to negotiate with us to find a formula for that?

I have a proposed amendment here which I can deliver to your staff. Or do you fundamentally oppose that?

I would hope the answer would be that you would negotiate with us on that question.

Secretary CHENEY. Well, I would be happy to take a look at it, Senator, without making any commitment to support legislation at this point.

I think there is no question, given the history on this issue and given its enormous importance to the Nation, and given the obvious deep involvement of the Senate—I cannot conceive of a set of circumstances in which we would go forward with that kind of major decision that would, in fact, violate or render inoperable the ABM Treaty without consultation with the U.S. Senate.

I think there is a long history there, and, given the way President Bush likes to operate, that is clearly a subject that he would want to discuss with the Senate before we proceed down that line.

Senator JOHNSTON. I, and some of my colleagues who are interested in this, are not trying to emasculate SDI or deprive it of all monetary sustenance. But, you know, in past years, we have been so concerned, and I think for very good reason, that they were going to try to make some test where all of a sudden, there we would be, faced with the reality that the ABM Treaty has been busted, and that we're going willy-nilly on developing SDI, and we're faced with a $100 billion phase 1 decision, when we never sat down as a Congress and as a White House and negotiated that.

Secretary CHENEY. Senator, let me comment, if I might, just for a minute on SDI.

One of the decisions I made was to reduce the Reagan recommended level of funding for SDI. I did it essentially for budgetary reasons. We have gone down to $4.6 billion, which is what I have recommended. It's about $1 billion less than the Reagan figure. It is $7 billion less over the next 5 years. We'll spend $33 billion, instead of $40 billion, on SDI.

There is, within the Department and within the SDIO, a group, a panel, that has been established by my predecessor, specifically to review all proposed tests of the system and to determine and certify their compliance with the ABM Treaty.

This process is in place. One of the first briefings I had when I became Secretary was on SDI, and one of the first topics we discussed was, in fact, that topic.

So, I think I can assure the committee that it is not my intention as Secretary, nor the President's intention, to in any way unilaterally proceed, if you will, in a way that would not involve consultation with the Senate. And, given the budget realities and the fact that we have had to cut funding for SDI, the fact of the matter is, of course, that we are not going to be in a position to make a decision to deploy for some years yet.

Senator JOHNSTON. Well, good.

If you would work with us on such proposed language, I think some of us who have been viewed, at least, as adversaries to SDI might be viewed more as comrades-in-arms if we could work that out.

Secretary **Cheney**. I'd be happy certainly to look at any language.

[The information follows:]

The Department has reviewed the proposed lnguage and considers it to be both unnecessary and counterproductive.

Regarding the concern as to whether we have changed our policy concerning the goals of the SDI program or consultations with the Congress and the Allies, the program goals have not changed, nor has our commitment to consultation.

With regard to program goals, SDI is a vigorous research and technology development program to determine the feasibility of countering ballistic missiles of all ranges. To provide a President and Congress with the information necessary to make an informed decision, a wide ranging and comprehensive research program is required. Likewise, issues that will be faced in Full Scale Development [FSD], production and even deployment must be studied now during the research phase in order to provide decision makers with the information they require.

With regard to consultations with the Congress before development and deployment of SDI, such consultations are inherently part of the legislative process. Administration budget submissions reflect the nature of the expenditure we are requesting, whether it is basic or applied research, FSD, production or deployment. We are several years away from an FSD decision on any element being researched in SDI with the exception of the Boost Surveillance and Tracking System, which is required independent of strategic defense considerations to maintain early warning capabilities.

With regard to consultations with Allies, we shall continue to consult as appropriate on the SDI program and policy developments with our Allies.

Additionally, the proposed language includes a prohibition on designing, building, or demonstrating prototypes of defensive system components which is ambiguous and appears to go beyond restrictions contained in the ABM Treaty. I consider such language to be inappropriate.

MOBILE MISSILES

Senator **Johnston**. It has been suggested that we negotiate a ban on mobile missiles in Geneva or elsewhere. I have never quite understood that.

It seems to me that mobile missiles, being the most survivable of our intercontinental missiles, ought to be those that both sides be encouraged to keep, and that you ought to first ban fixed silo weapons. Those are the ones that are the lucrative targets, the attractive nuisances. Those are the ones that you have to shoot them or lose them—what is the term—use them or lose them.

For this reason, I hope you will resist—at least I know you will think seriously about it—but I hope you will resist doing that. I mean, we ought to keep our mobile missiles. A reasonable number for the Soviet Union of mobile missiles, as opposed to fixed missiles seems to me to make a lot of sense.

What is your reaction to that?

Secretary **Cheney**. Senator, we have, of course, inherited a lot of history with respect to the START negotiations from the prior administration. We just began anew those negotiations, reengaged the Soviets, if you will, this week in Geneva.

One of the positions we inherited was the proposed ban on mobile missiles that the United States had tabled some time ago and was, in fact, our negotiating position at Geneva. It is still our negotiating position today.

The reason it is there is because we do not have at this point any approval from the Congress to deploy a mobile missile. We are in a position where, as a government, if we were to come off that proposed ban on mobile missiles in our negotiating posture without having prior approval from the Congress for a mobile missile, we, in effect, would be advocating a position where they have mobiles and we don't.

From a military standpoint, that does not make a lot of sense.

The other major reason we have had the ban on mobiles on the table in Geneva was because of the verification problems. We have not yet worked out a verification regime, in terms of being able to count how many mobiles the other side has. That is a new area for monitoring by national technical means. The Soviets have been deploying the SS–25 since about 1986, and the SS–24 is a more recent development.

But the bottom line is, as the President indicated in a meeting with the leadership just this week—the chairman was present at the meeting at the White House—we would be prepared to reconsider that negotiating position, assuming we can make progress on the verification front, and assuming Congress, in its wisdom, sees fit to go forward with the deployment of mobile systems.

Senator JOHNSTON. Mr. Chairman, do I have time for one more question.

Senator INOUYE. Yes.

SOVIET FORCE REDUCTIONS

Senator JOHNSTON. Thank you.

You suggest in your written statement that some military units and equipment have been withdrawn from Eastern Europe, but we have not yet seen the other promised changes in Soviet force structure.

I have been really curious as to, first, whether the Soviets are acting as fast as they could, or should, in the withdrawing of troops, and, indeed, how fast both of us can or should withdraw troops.

I mean, if we made the decision to withdraw *x* troops from NATO, how long would it take us? I know this depends on what troops, where they are stationed, what is the quantity, what weapons, and all that. But, in general parameters, how fast should they move to satisfy us, and how fast can we move if we so decided?

Secretary CHENEY. Well, of course, what we are watching for right now is the implementation of the unilateral reductions announced by Mr. Gorbachev in December. We are beginning to see, in fact, some changes, that is, withdrawal of tanks, for example, from Eastern Europe. It would appear that there is now the preliminary evidence that they are beginning to actually implement those reductions. This is some 6 months after the announcement.

It takes a long time. I don't want to give anybody the impression that it is the kind of thing you can do overnight.

You do not want the reductions to create instability. Of course, there is always a possibility of that kind of thing developing.

So I think it has to be done on an orderly process.

I cannot give you a precise timetable. That is the kind of thing we would negotiate. But I can give you some ballpark figures.

The President, in Brussels, suggested, for example, that we ought to be able to complete negotiations on a conventional force reduction proposal within 6 to 12 months. That will be very rapid. That will be good time.

We have been at the table in Vienna for about 17 years without significant progress. So if we can do it in 12 months, that will be good progress.

Then, if you can do that and finish the negotiations, say by 1990, we're talking about actually seeing the reductions occur in the 1992–93 timeframe.

Mr. Gorbachev's original proposal was that the reductions would not occur until 1996 or 1997.

So if you buy the sort of optimistic scenario of President Bush, you are talking about a period of about 3 to 4 years here, to the point where you would actually be able to draw down those forces.

It really complicates your planning problems, your logistical problems, your manpower problems, and what do you do with the people. The process by which you create a military force is a fairly special one. It is not the kind of thing you can take down rapidly without doing serious damage, and you don't want to do that. It is going to require a lot of thought, a lot of planning, a lot of negotiation with our Allies, decisions about which units would be taken out or which particular weapon systems would be taken down. I am sure it is just as complex a problem on the other side as it is for us.

But I would think we were talking about a period, if we could get an agreement within the next 12 months, of seeing those reductions implemented in the next 2 to 3 years.

Senator JOHNSTON. I would like to submit for the record a series of questions I asked the Air Force on Navstar Global Positioning System and their responses.

Senator INOUYE. Without objection.

[The information follows:]

DEPARTMENT OF DEFENSE INFORMATION PAPER

Date: 1 JUN 1989

Service/Agency: Department of the Air Force
Appropriation Account: N/A
Budget Activity: N/A
Subject:-General Information on the Navstar Global Positioning System (GPS)

Question/request #1: The current status and future outlook for the GPS system.

Answer #1: Information provided in briefing (hardcopy attached) given on 8 May 89.

Question/request #2: DoD policy to prevent unauthorized usage of both the P and the C/A codes and the accuracy attainable under this policy.

Answer #2: GPS employs a technique called Selective Availability (SA) to prevent unauthorized access to the Precise Positioning Service (PPS—16 meter Spherical Error Probable (SEP) accuracy). Explicit DoD policy is that SPS will be broadcast in the clear, available to all users and maintained at the highest level of accuracy consistent with US national security interests. In peacetime, implementation of SA results in a Standard Positioning Service (SPS) accuracy of 100 meters 2drms (approx 76 meters SEP). In time of national crisis, this accuracy may be degraded beyond 100 meters on determination of need by appropriate senior command authorities.

Question/request #3: Does DoD have a policy and means of dithering the code/signal so that less than 10 meter accuracy is unachievable for civil use with a receiver in a differential mode?

Answer #3: DoD, in coordination with DoT, plans to control differential GPS transmissions to prevent interference with GPS satellite signals and to protect US national security interests. DoD is evaluating the implications of differential GPS on overall GPS operations but has no plan to disrupt proposed differential services through dithering of the navigation signal. We expect that commercial differential GPS services will operate under constraints similar to present broadcast navigation services regarding operation in times of national emergency.

Question/request #4: There are some who believe that by using differential techniques and the C/A code (dithered or not) unauthorized users may be able to achieve plus or minus 2 meter accuracy in a dynamic state. How will DoD secure against this technique?

Answer #4: As indicated above, DoD plans to control differential GPS transmissions, in coordination with DoT, to protect US national security interests. To date, the theoretical improvements available from differential techniques have not been demonstrated in the operational GPS environment.

Question/request #5: How the DoD intends to use Selective Availability?

Answer #5: As indicated above, SA is the technique used to restrict PPS accuracies to authorized users only.

Question/request #6: How will the GPS work with a stand-alone receiver vs multiple receivers in a differential mode?

Answer #6: Differential effectiveness in the operational environment (with SA activated) has yet to be demonstrated or quantified. It is not yet possible to compare differential with non-differential operation.

Question/request #7: Does DoD have any intention of releasing the Precise Positioning code to the civil community? If so, why is that necessary?

Answer #7: We anticipate that there will be some requirements for access to PPS in the civil sectors, both government and commercial. DoD policy will permit limited civil use of PPS if it can be demonstrated that such use is in the national interest, that adequate security protection for the necessary cryptographic keys can be provided and that comparable accuracy cannot be obtained from another source. Procedures will be published prior to GPS being declared operational which will define how civil users can apply for access to PPS.

Senator JOHNSTON. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you, Senator Johnston.

Senator Specter.

STRATEGIC DEFENSE INITIATIVE

Senator SPECTER. Thank you very much, Mr. Chairman.

Mr. Secretary, I would like to pick up on what Senator Johnston was asking you about with respect to SDI and the list.

It has been a matter of some controversy as to whether the narrow or broad interpretation of the ABM Treaty is accurate. I do not believe that controversy has been resolved, notwithstanding the vote last year in the U.S. Senate.

After visiting the negotiations in Geneva in early 1987, I undertook a study of the ABM Treaty, the negotiating record, the Senate deliberations, the practices of the parties, and came to the conclusion that we were not bound by the narrow interpretation; that there was a very strong case to be made for the broad interpretation; and that, at worst, you could make a case either way.

In the light of the considerable evidence that the Soviets do not consider themselves bound by the narrow interpretation, it seemed to me foolish for the United States to be bound by an interpretation that the Soviets were not bound by. It is a complicated question because, from one point of view, the United States may have negotiated one treaty with the Soviets and may have submitted a different treaty for ratification.

But it is really not the Senate's understanding which governs a treaty, in my view of the international law, but what is the agreement made between the two parties, the United States and the Soviet Union.

One of the factors which very much concerned me was the evidence that we were spending a lot more money in adhering to the narrow interpretation, which I believe the Department of Defense was doing, and that we were going a lot more slowly than we might have done had we followed the broad interpretation.

There was a lot of concern in the Department of Defense, General Abrahamson and others, as to what was the proper interpretation of the treaty and what the consequences would be if SDI proceeded under the broad interpretation, as the President, President Reagan, insisted, and the Senate made a different conclusion, and what would happen in hearings like this one and otherwise.

The question I have is what is your view of the speed for development—not deployment, but research and development—and the cost of research and development if we follow the broad interpretation, as contrasted with the narrow interpretation, of ABM?

Secretary CHENEY. Senator, I would like, if I might, to submit a more detailed answer for the record.

[The information follows:]

It is difficult at this point to quantify the cost—in terms of money, time and confidence—in continuing to conduct the SDI program under the restrictive interpretation of the ABM Treaty. However, it is clear that, as we prepare for a potential deployment decision, at some point in the SDI program we will reach a point where additional testing consistent with the narrow interpretation will provide only marginally useful additional information, and where we will need to test under the broad interpretation.

In any event, we do not foresee a requirement to move beyond the restrictive interpretation for a number of years, given the current structure of the SDI program. As we have made clear previously, we will define the best technical program for SDI, and if that program raises an issue regarding ABM Treaty interpretation, we will address it with Congress, considering the specifics of the proposed program on a case-by-case basis.

Secretary CHENEY. I can say to you that I think most of you know from my own record in Congress that I have been a strong advocate of SDI. I remain a strong advocate of SDI. I prefer the broad interpretation of the treaty. I think it is the correct interpretation.

But I also recognize the controversy that is built into this debate, that has surrounded and swirled around the issue over the last couple of years. I come back again to the proposition that it is my understanding—and I will change it in my written submission if I'm wrong; I want to go back and check precisely—it is my understanding that, at least for now, we are able to proceed adequately with the testing program without having to cross that bridge, so to speak, and that the process we have set up within the Department to insure that what we do is indeed treaty compliant is the best way for us to operate.

Finally, I am confident that the President would not want me to proceed in a way, unilaterally, as Secretary of Defense without broad support from the Congress in an area as important as this one; and that whatever we ultimately do with respect to deployment of SDI is going to be done with the kind of broad consultation that I think has been the hallmark of his administration; and that if you are going to expend those kinds of funds for that kind of purpose, I don't think you are going to do it unless we can build a consensus for it. That is a challenge for political leadership. But it obviously means that you are going to have to work closely with the Congress to carry out that objective.

Senator SPECTER. Mr. Secretary, I agree with you on the consensus issue. I have not voted for the top expenditure on SDI. But it seems to me that, whatever our expenditure is, we ought to be getting the most for the dollar, in terms of what we may legitimately do.

Are you in a position to state now, or perhaps you would want to submit it for the record, on a confidential basis, as to whether the Soviets are following the narrow or broad interpretation of ABM?

Secretary CHENEY. I'd like to submit that for the record, Senator.

[The information follows:]

As best we can determine, the Soviets have not carried out any broad interpretation experiments; however, our monitoring capability is such that we cannot be certain they have not.

Senator SPECTER. I would be very interested to know that, and I appreciate your statement that you will take a hard look at whether we really can conduct the tests in the most efficient way, economically and timewise, within the narrow interpretation.

Candidly, I would be surprised if you find that you can.

It is not a simple subject, and I do not represent that I know all of the technical ramifications. But I personally very much would appreciate it, and I think it would be very helpful to the Congress, if you really took a very, very hard look at these questions. How much more does it cost us to follow the narrow interpretation? How much longer is it if we follow the narrow interpretation? And what are the Soviets doing?

If you answer those three questions that the Soviets are following the broad interpretation and that it's more costly and takes us a lot longer, then I believe that in the face of that kind of factual information, the next time this issue comes before the Senate there may be a different view of narrow versus broad. Or, it might at least inspire us to have the kind of detailed hearing which we have not yet held.

There were joint hearings between the Judiciary Committee and the Foreign Relations Committee on narrow versus broad, but we did not even scratch the surface of really getting down to the hard analysis of the negotiating record, which is the key to it, let alone the subsequent practices of the parties.

Those three factual questions are, in my opinion, very, very important ones.

Mr. Chairman, do I have time for one more question?

Senator INOUYE. You do.

MX/SICBM

Senator SPECTER. It is this, Mr. Secretary.

I noted the public comments which were made by the meetings earlier of certain congressional leaders with the President on an agreement of sorts, or at least what I understood, to proceed with both the MX and the Midgetman, so long as there would be reconsideration of the negotiating position, as you articulated it. Some others called it a bargaining chip.

My question is, if we publicly say that we are going to be developing these systems to bargain them away, how effective are they as bargaining chips, as bargaining positions, if it is known and we put it on television for the Soviets to see in advance?

Secretary CHENEY. Well, I would not want to put that interpretation on it, Senator.

What I would argue is that we believe it is important to add mobility as a key element to our land-based force. The Soviets, with the SS–18, are able to hold at risk our missiles based in silos. While we do not believe their other systems currently have that capability, obviously with improvements and modernization in both the sea-based leg of their forces, as well as their mobile forces, they are likely to possess that capability in the future.

If you think about the broad spectrum of the threat over the course of the next 10, 15, or 20 years, it is clear to me that you are, in fact, going to want to have mobile land-based missiles for survivability of that force.

This is the main reason why Congress, in my opinion, ought to approve our proposal, to add mobility to the force.

At the same time we are doing that, we are embarked upon negotiations with the Soviets to limit strategic systems. We have broad agreements in a few areas on the total number, for example, of ballistic missiles, of strategic nuclear delivery vehicles, total number of ballistic missile warheads, et cetera.

During the course of those negotiations, it may be that we will want to seek limits on mobiles as well. But, at present, not having approval from the Congress for mobiles, we do not have any leverage with respect to the negotiations on mobiles, and we also are not in a position, frankly, to come off the ban that we have tabled, that we believe has to be our position until such time as we make a decision to go forward and deploy those systems.

So I would not treat it simply as trading stock. That is certainly not our view of it. But we do think having congressional approval of mobiles will strengthen our hand in terms of the negotiations in Geneva.

Senator SPECTER. Thank you very much.

If I may, I would like to submit questions for the record. I have a big State with a lot of special interests. I'd like to submit questions on the V–22, the F–14D Tomcat, the M–88A–1, and some others.

Secretary CHENEY. We will be happy to answer them, Senator.

Senator SPECTER. Thank you.

Senator INOUYE. Thank you.

Senator Hollings.

Senator HOLLINGS. Thank you, Mr. Chairman.

ABM TREATY

Mr. Secretary, you are a great breath of fresh air. I congratulate you and I think you have gone about your new assignment in a most deliberate and astute way. You have a friend here who wants to give balance to some of this about a "group" on the committee that is concerned.

Let me tell you, on the ABM Treaty, I was in the tent in Helsinki in August 1971, when Mike Mansfield and Gerry Smith, the Chief Negotiator, and Royal Allison, Paul Nitze, and Harold Brown were there. I have statements from each of them on the broad interpretation. I can show them to you in Gerry Smith's book; I can show you in Paul Nitze's restudy of the entire thing about the broad interpretation, the statements of General Royal Alison, Bruce Palmer. And Victor Karpov, in "Izvestia," said the Soviets never did believe in that narrow interpretation.

So, at Krasnoyarsk, about which there is concern that they might violate—they have already violated at Krasnoyarsk, and there are the violations with the radars at Gomel.

So we should not get to negotiating with a group of Senators to politically please them. They cannot change that record.

I think you are right, you have to get a consensus, because they are important Senators and they are concerned. And if you can avoid a political fight and still move forward in technology, then you are smart. That's the way to do it.

But if you've got to get into a political fight, you've got some allies.

I'm glad to hear you say you believe in SDI because we have to go technical. You're not going to use a short-range Lance in Germany. I don't know why we have the idea that we will. If we use one in the next 10 minutes, they'd use 50 more against us. They have a tremendous superiority.

We're not going nuclear. We'd better understand the concerns of our West German friends.

I know Maggie Thatcher likes to go at it, but none of them can reach her. So she is disciplining everybody.

But we live in the real world.

If you were President Cheney, you would not start with nuclear, short range, in the Fulda Gap, because if you fired one, they would fire 50 back at you, and then go the whole way and take us instead.

You know, we learned something in Vietnam: that you don't destroy it in order to save it. So no President in his right mind in the White House is going to end the world over Europe. Therein is where we lack credibility in our defense posture, whereby we gave up a ground-launched cruise missile that we could pinpoint on the Soviet Union, on the airfields, on the communication centers. That was the stupidest decision ever made.

GLCM's, we could have put a Russian by each one of them and tell them where it was aimed, and they could have continually verified them. And, we could afford GCLM's.

Specifically on Europe, I like your approach to go first to Europe and I like President Bush's approach. In fact, I resist the letter approach from Senators. When you were there with President Ford, you hadn't been there 5 days before we told you what to do with

Israel. Poor Jim Baker hadn't gotten the policy out on Israel before there was a letter that I did not sign. It might be right; it might be wrong. But I like to give the President a chance.

I am glad to see him give leadership by tabling the proposal to draw down some 30,000 troops and 15,000 planes, and on down the line. You started at the right place, in Europe.

You see, don't start in Korea, like this other letter that's come along, because we've only elected a free government in Korea last year. We elected Adenauer and a free government in West Germany 40 years ago. They have had plenty of time to stabilize. This letter will say that we don't want to irritate the Koreans with our military. We'll irritate them way more with a letter from the Congress, I can tell you that. It will upset them.

The opposition leaders in Korea, Kim Yong Sam, Kim Dae Jung—I have met with them. They said for one thing, Senator, for God's sake, don't take away the military.

They are not demonstrating, the opposition, against our military there. There are some adjustments to be made. We're getting rid of the golf course downtown and we can move our military out of the middle of Seoul. That would be a saving step in the next 3 or 4 years. You could gradually move the Second Division back, the American participation not out of country, but back. Let them assume the responsibilities and do it in a deliberate fashion, but do it through consultation.

Let's not do it through letters because if you really want to save money, let's start with No. 1.

When we came around with President Reagan and Congressman Cheney, we cut 10 percent of your staff and my staff and all the departments of Government in 1981, except yours, that of the Secretary of Defense. We went up some 137,000. But you still this minute have 115,000 more civilians over there than what you had in 1981.

Get rid of them.

Barry Goldwater said that crowd is all over the place. They study, restudy, report, and do this and do that. So you can get 115,000 off the payroll over there and still have the complement you had in 1981, which was operating fairly well.

Similarly, in Europe, rather than worry about the troops right now, you have 300,000 dependents and 40,000—no, 50,000, I guess—civilians. Yes. There are 50,000 of your civilians running around over there. Get rid of them.

Make it a year's tour, without a family, like in Korea. It's a military thing and we can really save money.

Where is that outlay figure. You have gone up $7.5 billion—from $292 billion to $299.5 billion. You will go up $7.5 billion in 1990 over 1989.

All this double-talk about how we had a 1 percent cut. I know that's from inflation and everything else, but let's talk right straight across the board.

You have asked, and probably will get, an increase, where we are going to have to decrease a lot of budgets. But there are plenty of places to save, and you are going to have to go for technology, less troops, and a bigger Reserve and a bigger National Guard.

I hate to say that. We didn't even use troops in Central America. So if we're not going to use them there, then we're not going to use them over there [indicating]. You sure don't need all the civilians going around.

If you see the Eleventh Armored Cavalry, it's the finest unit we have. It's right in the Fulda Gap. But the colonel there, who is outstanding. He was talking about how we're getting water lines, we're getting sewer lines, we're getting a library. He sounded like a small town mayor in Wyoming. [Laughter.]

I mean, that whole picture has changed in Europe now. They have to look out for morale and everything. They have drugs and everything. They are worried about themselves. They aren't worried about the Russians; they're worried about the Germans and low flying and the nuisance they are making. That's why.

Mike Mansfield, in 1971, came with that particular amendment, to counter Servain-Schreiber and the French, and they were withdrawn because we had gotten to be an object of disaffection.

That is happening in Europe, so you are going to have to move adroitly. But, in the meantime, you're going to have to negotiate getting rid of all those civilians.

If you had them come through the Fulda Gap, they'd lay down a chemical blanket. And, by the way, everybody is cussin' out Deng Xiaoping who's killing all the Chinese, but they don't say anything about chemicals, poisonous gas, used just 6 weeks ago in the Georgia section of the Soviet Union against a sit-down hunger strike in the middle of the town, killing 49 Soviets, plus hundreds injured. And they did it deliberately. They told the hospital that they were going to do it, to get some treatment out for it because they were going to use poison gas.

So if they are using poison gas on their own people, they would lay down a blanket of poison gas around all our replacement airfields and everything else. There would just be one jam.

We'd have 300,000 families trying to get in and then get out because they couldn't get into the airfields, or whatever it is. It would be easy to defeat us in Europe the way we are deployed around that place.

You've got to depend on your technology.

Specifically, go over there, to Korea. You'll see they're doing an outstanding job. I've never seen a better working relationship between the front line of the Second Division and the Korean troops themselves.

They ask these gentlemen to write, but I think they are going about it in the wrong way. I think we ought to start in Europe first. I think we ought to be consulting with the White House, rather than just writing letters and making records that we ought to not make commitments, because that is an important commitment to that Secretary of Defense.

You are in for a brief period. Well, he has been in for only a year. He has only had a democratic government for only a year. So he has real problems to get the whole group over there to stabilize. They are the best of allies. Let's at least keep them that way.

But let's get to Europe and cut down on that largesse. Then, particularly, go right ahead—I'm glad what you said—on the SDI. Because we are committed. Maybe we can't move as fast. But don't back off on that one at all because there are many here who will debate the SDI, the ABM. Just as you have felt about it, we've felt about it, with the previous administration, because we just can't do it with troops. We will never equalize the number of Chinese and the number of Soviets. We are going to have to depend on our technology. There is a race in space going on and we are playing catchup ball. We're playing catchup ball.

So I congratulate you and I am willing to help in any way I can.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Cochran.

PILOT RETENTION

Senator COCHRAN. Thank you, Mr. Chairman.

Mr. Secretary, I think your performance as Secretary of Defense is very impressive, and I commend you on the good job you are doing and your perception as you analyze how we are tracking and keeping well-qualified men and women in the military today.

One of the big attractions, I know from a personal experience I had, may have been similar to the one you recounted, running into a Navy pilot and you found out the reason he was in and the reason he likes being in is he likes to fly Navy jets.

I happened to be out in the Arabian Sea area several years ago, when tensions were getting pretty severe there, riding a carrier. One young officer from my State was assigned to be with me during a night operations exercise. One of the things they had as a responsibility then was to be on alert. In that status, the pilots would actually be in the airplanes on the flight deck, just sitting there for a long period of time. I have forgotten now whether it was an hour or 2 hours. But it looked like pretty boring stuff, sitting there at night, in that flight deck.

I asked him didn't he get bored with that. He said no, I like that. I said why is that, and he said because I might get launched.

Just the expectation of getting launched was justification enough for sitting out there on that flight deck in that airplane at all hours of the night.

That fascinated me. But it also indicated the dedication, too, of those who were serving in the military. That is not just back then, but that is now, too.

But I wonder if we are not creating a situation where it is becoming unpleasant for a lot of them who are in the Navy right now. We had long deployments then, when we had the hostages in Iran and tensions were escalating. Then we had the Iran-Iraq war that broke out, and we had people over there in that region for long deployments.

I know those carrier task forces and others were required to stay at sea for months at a time.

Has that drawn down to some reasonable amount of time for deployments? I know that Senator Stevens talked about the fact that we've gradually increased our presence in Europe over a period of time almost without knowing it or realizing how much we were increasing that presence. Haven't we increased our readiness by training? Our time at sea is so much now that it is becoming a problem in terms of retention of well qualified and dedicated young men and women in the Navy service.

Secretary **Cheney**. Senator, it is a key item.

It turns out that I asked for some information on this during the course of deciding, for example, that we were going to stop with 14 carrier groups instead of going to 15. I wanted to make certain that I understood the issues.

It turns out that the magic number is about 180 days. If you go much over a deployment of 6 months, you really do begin to have personnel retention problems. When the fleet comes back in, pilots quit, sailors have just had too much time away from home or time away from their home base.

So I have given instructions through the Joint Chiefs and worked this up in conjunction with Admiral Crowe, the Chairman, that we will cover our deployments but not to exceed any single deployment with those carrier groups beyond that 180 days.

If you go back and look at the early 1980's, when we had fewer carrier groups, major commitments out there, there were times when we had the *Nimitz* deployed, for example, as long as 280 days on a single deployment. It is especially true when you were trying to cover the Indian Ocean and when we had fewer groups. Now we think we can cover our commitments. We can do it with that limitation, and that works out to be just about the optimum amount.

But we are very sensitive to it. We watch it very closely because it does have a significant impact.

QUALITY OF LIFE

Senator **Cochran**. I think the point that was made about families being overseas and the expense of that just brought to my mind those who are not overseas with their family members, the families that are separated because of the requirements of the military. This is a serious problem that needs attention. I am glad you are looking at that and recognizing it as a potential problem.

One thing that came up during all of our hearings—and this is our last hearing as a subcommittee, as you know, before we actually begin work on the bill that we will have to recommend to the full committee—we had the regional commanders in. In each instance, one thing that I recall was that they talked about how important sealift capability was and in trying to get people, trying to get armaments, equipment, from one place to another. We have already had the experience just recently of the very sudden transfer of troops and equipment down into the Central America. To some extent, sealift capability was tested there.

But if we ever got into a serious situation and had to move folks, we would be hard pressed to come up with the ships that were necessary.

I wonder whether or not you have any plan to look at that, maybe recommending a program to help deal with that situation.

We have a very few shipyards left in our country today, and that problem is getting more serious day by day.

What is your impression of that situation as a problem? Is it as serious as some of us perceive it? What can we do about it?

Secretary Cheney. It is a problem, Senator. We need to distinguish between common-user, the military sealift, and our capacity, for example, to move a Marine brigade which is pretty good. We're beefing that up. That is provided for in the budget.

The place where we have a real problem is with the merchant marine maritime capability that is really privately owned and not dedicated to the military that we could mobilize in wartime.

A key part of our plans, war plans, obviously involves mobilizing the civilian air fleet. We have arrangements to do that. Those plans are laid away, worked out with the airlines. We know that on relatively short notice, we could round up an awful lot of airlift capability using our commercial air fleet.

We do not have as much capability where sealift is concerned as we would like because of the sad state of the American maritime industry basically.

General Cassidy. The CINC in charge of TRANSCOM has made some suggestions to me concerning sealift. In addition to pointing out the importance of ongoing programs such as the Ready Reserve Force and afloat prepositioning, he is encouraging a review of a wide range of options to improve our sealift forces. It is an area that we need to address. It may become even more important in the future, especially if we end up redeploying U.S. forces back to the continental United States because of basing problems overseas or because we get a drawdown on our force commitments in Europe. That may become more important than it is now to have that kind of lift capability.

So it is a subject that I am concerned about. We are looking at it. I don't have any quick answers for you today, though.

Senator Cochran. Thank you very much.

Thank you, Mr. Chairman.

Senator Inouye. Thank you.

Senator Bumpers.

Senator Bumpers. Thank you, Mr. Chairman.

Welcome to the committee, Mr. Secretary.

Secretary Cheney. Thank you, Senator.

ABM TREATY

Senator Bumpers. Mr. Secretary, can you tell us whether or not there is a review going on within the administration on the narrow versus broad interpretation of the ABM Treaty?

Secretary Cheney. Not to my knowledge, Senator.

Senator Bumpers. You have not been asked to participate in such a review?

Secretary Cheney. I have not.

Nobody has talked to me directly about it. We have a lot of reviews underway as part of the national strategy review. I have seen most of those memoranda from the President, though, and I don't believe that's on the list.

If I find out differently, I will set the record straight. But I don't believe there is any such review currently underway.

Senator Bumpers. What do you think about Senator Nunn's suggestion that we might trade off the MX for the SS–24?

Secretary **Cheney**. We have not made any decision in that regard yet, Senator.

We are in the process of looking at all of that in our runup to beginning the START negotiations. The position that we have currently taken is the one that the President has announced and that Rick Burt has announced in Geneva; that is to say we still have on the table the proposed ban on mobile missiles, all mobile missiles, primarily because we do not yet have approval from the Congress to deploy any mobile missiles, and we think it is foolish to come off that ban until we have made a decision here at home, and because we have not resolved the verification issue.

Ultimately, what kind of arrangement you'd work out with the Soviets on mobiles—would there be a limit; would you eliminate a class, for example, MIRV'ed mobiles; would you count the MIRV'ed warheads on mobile systems differently or in the same category as the 4,900 limit that we currently have on SLBM's and ICBM's? All of those kinds of issues are up for grabs.

We have not taken a specific position on that proposal.

MILITARY LEADERS EXCHANGE

Senator **Bumpers**. Let me just ask you this before I forget it.

Do you think that what Chairman Crowe is doing with these exchange visits, with Akhromeyev coming over here last year and him returning the visit this year, do you think that is a healthy thing?

Secretary **Cheney**. I think it is enormously valuable.

I had the chance to talk at some length with Bill Crowe about his visits when Akhromeyev was here last year. I have had a couple of messages from him this past week, interim reports while he has been in the Soviet Union. I expect to be spending a lot of time with him as soon as he gets back in about a week.

He has had access to the Soviet military that nobody else has ever had.

Senator **Bumpers**. It's been rather surprising, I think, even to him.

Secretary **Cheney**. Yes; I think even to Bill.

I know the Chairman was looking forward to the trip. He felt very strongly about it and spent a lot of time preparing for it. From all accounts that we have received directly from him as well as through the press and public statements, it has been enormously successful.

Senator **Bumpers**. Mr. Secretary, General Scowcroft is right now briefing the Arms Control Observer Group over in S-407, where I am going from here. A group of us from that group is going to Geneva on Saturday.

I believe I remember General Scowcroft, even before the Scowcroft Commission Report, said that he thought one approach to reliability for strategic deterrence would be for each side to have about 500 to 1,000 single warhead mobile missiles. Whether he still feels that way or not, I don't know.

I know that in 1984, he wrote to the President urging him to proceed with extreme caution on SDI. Whether he still feels that way or not, I don't know.

But one of the things that has been troubling to me about this two mobile missile approach, the rail mobile and the Midgetman, is I would feel a little bit more secure about how I was going to vote and how I ought to vote on it if we are going to have an option, if we're going to have both of them, if we're going to have neither of them, if I just knew for sure that the Defense Department had pretty much settled in within the broad framework of the START Treaty that has been agreed to so far—namely, 6,000 warheads—if I just knew that all of our strategic planners had agreed on what the mix would be.

Can you shed any light on that? Do we have anything in concrete, or do we have three or four options we are still debating on it?

Secretary CHENEY. That is an issue of great significance. It has not yet been resolved. It will depend in part upon what kind of negotiations ultimately grow out of the START deliberations. It makes a big difference, for example, what kind of bomber counting rule we get coming out of there. I know we have a preliminary agreement on the Reykjavik counting rule, on bombers. We're still debating the issue on ALCM counting rules, ALCM-equipped bombers. There are major differences there on both sides.

If, for example, you were to negotiate a ban on MIRV'ed mobiles, that might lead you in a different direction than if you had two kinds of mobiles in the force once you got through.

There are all kinds of proposals on the table. At this point, for us to come down and say that we know exactly what our strategic forces will be configured like once that is completed is a difficult thing to do.

There is another reason I think that frankly it has not happened yet and that is it probably is going to create one heck of a dog fight. Obviously there are strong interests who want a lot of submarine-based systems, and strong interests who want a lot of land-based systems, and strong advocates of the manned bomber. It will be my job ultimately to make a recommendation to the President, who will make a recommendation to the Congress on exactly what that force ought to look like.

But I think you can see the broad outlines of it today. We know that, clearly, we are going to have a significant number of sea-based systems based on the Trident. We know that we want to preserve the land-based leg of the Triad. Whether that is 1,000 single warheads in silos or mobiles or whether some mix of that is MIRV'ed mobiles, whether we retain the Minutemen II and take down the Minutemen III, or whether we adopt a down-loading rule in the negotiation that will allow you to take down the number of warheads on an existing system to comply—all of those kinds of issues are up for grabs.

We can do some preliminary planning. We can talk about how much we want to rely on air breathers versus those others.

The one thing I am confident is that we do, in fact, want to preserve the Triad, we want to modernize each leg of the Triad, and beyond that the exact mix is something we will have to work out with the Congress. Congress obviously is going to be involved in the decision and will have to approve whatever we finally recommend.

STRATEGIC TRIAD

Senator **Bumpers**. We presently have about 70 percent of our strategic forces at sea. I like that. I think that's fine. I still consider that part of the Triad the most invulnerable.

But if we were right now going to say we're going to continue that 70/30 split between sea-launched and everything else, we already have lead money appropriated for the 17th and are about to appropriate money for the long-lead items on the 19th Trident. Just those Tridents alone will represent about 70 percent of the 4,900 ballistic missile warheads we would be allowed under the START framework both sides have agreed to in Geneva.

So if we intend to maintain that roughly 70/30 split, we ought to be looking very carefully, Mr. Secretary, about whether we are going to go beyond the 17th Trident, because we are headed for 21, as you know, under the current 5-year defense plan.

Secretary **Cheney**. Right.

I am very aware of that, Senator.

One of the provisions that we're looking at—and I don't recall whether this has been agreed to yet; I mean, there have certainly been some preliminary discussions in the talks—is the motion that at any given time you would only be allowed to have three boats in effect stand down, in for overhaul, for resupply, and so forth, and that those would not count against your total sailings.

Senator **Bumpers**. That worries me a little, too, because the Soviets always have a lot more in for overhaul than we have.

Secretary **Cheney**. That's true. But if we'd agree that they count, except for three, that is, you'd allow for——

Senator **Bumpers**. That's three on a side?

Secretary **Cheney**. Three on a side. They'd have to count the others that they had in port. But that would give us some flexibility in terms of deployment and managing the force.

KOREA FORCES REDUCTIONS

Senator **Bumpers**. Finally, Mr. Chairman and Mr. Secretary, I suppose I did not intend to talk about this today, but I see no reason not to.

Tomorrow, Senator Bentsen, Senator Johnston, and I, will introduce a bill to reduce our forces in Korea by 10,000 men over the next 3 years.

Now, the Chairman knows that I had mentioned this with a number of witnesses in this committee because I had become increasingly convinced that that debate ought to begin about our presence in Korea.

I know the Koreans, the diplomatic corps here and everything, have been a little upset about some of the comments I have made about this. Perhaps I'm saying too much, but I think that also accounts for the letter you have from the Korean Defense Minister.

It certainly accounts for the letter you will receive tomorrow from Senator Johnston and me, urging you not to sign any kind of agreements with them, as has been suggested by the Defense Minister.

Now, this is not Korea bashing. But it is simply to say they do, in fact, have an embryonic democracy going in Korea, and we wish them well. We want to promote it.

But it seems to me that these points ought not to be lost on anybody.

No. 1, the South Koreans have a GNP of seven times that of North Korea. By 1995, at the present rate, their GNP will be 10 times that of North Korea, or maybe more.

Their population is twice that of North Korea. Their expenditures for defense, as a percentage of GNP, is smaller than ours.

For all of those reasons and more, plus the fact that they probably have about the third or fourth biggest trade balance against the United States—they had a $10.6 billion trade surplus against the United States last year.

Now I don't know. If they are not big, grown-up boys, big enough to take care of themselves now—it's true, their forces are not as great as those of North Korea. But one of the reasons they have a 7 percent to 10 percent growth rate in their GNP, South Korea, that is, as opposed to a static growth rate in North Korea, is because North Korea, like a lot of others, is trying to maintain a bloated defense apparatus, and, as a consequence, they are going to wind up the same way the Soviet Union is right now.

While I applaud what is going on in the Soviet Union, Mr. Gorbachev is not doing all those things to accommodate us. He is taking public relations advantage of it, and I don't blame him. I think he is a real player and we ought to take advantage of that.

But he inherited a basket case. And, as you correctly pointed out in your opening statement, he does not have any choice. The only place he can even begin to get the resources to supply consumer goods to his people is out of the defense apparatus in the Soviet Union.

But back to Korea. I hope, I sincerely hope, that you will not make any such agreement with the South Koreans, and I know you would not, as the President would not, without a lot of consultation with each other and perhaps with Congress.

But I am one who would like to have gone much further. Some of my colleagues got me to slow down a little bit because I would like to have taken everything but the Air Force and maybe some other units out of there—maybe 30,000 men out.

There is no big cost saving. I am not suggesting that we tell you what to do with 10,000 or 30,000 men that come out of Korea. You can redeploy them in the Philippines, if you want to, where they might serve a much better purpose. So we are not suggesting that.

We are not suggesting that you are going to balance the budget or cut military spending dramatically. But you can cut it quite a bit.

My final point, Mr. Secretary, is this. Every dissident group in South Korea invariably vents their hostility against the United States, on such things as the downtown Seoul golf course.

We're even spending $1.5 million annually training their best officers. Why should we not at least make them pay the $1.5 million that we spend training their officers over here? I mean, some of those things are just unfathomable to me.

I'm not even asking you to comment on this. I'd welcome it if you would care to, though.

Secretary **Cheney**. I think I'll pass up the opportunity, Senator. [Laughter.]

But I'll certainly be happy to look at your letter.

Senator **Bumpers**. Thank you.

Thank you, Mr. Chairman.

Senator **Inouye**. Thank you.

Senator **Rudman**.

Senator **Rudman**. Mr. Secretary, you have had a long appearance here and I'll be brief.

I would comment on Senator Bumpers' bill. That is a very interesting proposal. I think one of the things that you are going to have to assess is the competency and the ability of the Korean forces—air, ground, artillery, and so forth—which I think is often ignored. I say that without casting aspersions on them. I just say that many people do not understand that. I think I do, for very personal reasons.

Mr. Secretary, I want to talk briefly about just two things. First is the airborne leg of the Triad.

TRIAD AIRBORNE LEG

I found your remarks on page 4 interesting on the B–2. I think it would be fair to characterize your statements before this, other statements I've seen, as being fairly constrained in your views about it and having serious doubts about it in terms of its cost. It seems, after the study that you mentioned and your visit and so forth, that you have, to some extent, I think, changed your view.

I wonder if you would like to comment on that. I will have a couple of followup questions.

Secretary **Cheney**. Sure, Senator.

I cannot claim to have had any expertise on the B–2 before I arrived in the Department. I had supported it as a Member of Congress.

What I recall is that back in about 1980, a lot of us were very unhappy when the Carter administration saw fit to make public the existence of this program, to develop a Stealth bomber.

Then, in the early 1980's, the proposition that was put to us was whether or not we ought to build on an interim basis the B–1. There was never any doubt in those days what we wanted to go with the B–2, the Stealth technology. But the question was, do you want to build the B–1, and ultimately we decided to.

I have always supported the B–2 as Secretary, and going through the budget exercise, I was concerned because, when we tried to put together the budget, I got, frankly, conflicting cost data from the Air Force versus the OSD staff.

On that basis, I decided that it was important for me to undertake a review of the program and also to look specifically at the cost figures and get some reconciliation between these different numbers that I was receiving.

I have been convinced, based upon having looked at the program very carefully, that we have, in fact, come upon an enormously significant, new capability; that this is not just an evolution of aircraft, if you will. It's not another fuselage with wings slapped on it that flies a little higher and goes a little faster and carries a bigger payload.

It is a revolutionary development in aviation. In this respect, when you think about its capabilities, its capacity to penetrate Soviet airspace, the most sophisticated air defenses in the world, its capabilities in a conventional role, should we decide to deploy it in that roll, its payload, its range, and the fact that it does all of this in a Stealthy fashion, without your adversaries even knowing you've been there until the bombs fall on them, is an enormously important capability.

When you look at it in terms of cost comparison, there is no question that it is expensive. It is as though we crossed through some kind of threshold when we went above $500 million.

But if you go back and try to compare apples and apples with previous aircraft, use constant dollars, fly-away costs for the B–1 and the B–2, I looked at the numbers the other day and I believe in 1981 dollars, which was the base year for the program, the B–1 fly-away cost is $144 million and the B–2 fly-away cost is $181 million. It's about 25 percent more.

So I think, while it is expensive, it is an important capability to have.

The reservations I have expressed have partly to do just with my own style of operation.

One of the things I have been frustrated with over the years as a Member of Congress was the extent to which oftentimes advocates of programs in the national security area would come before the committee I served on then, the Intelligence Committee, and give you an absolute, gold-plated guarantee that these numbers are bottom line, that this is, in fact, what the system is going to cost, when there was doubt about the credibility of those numbers. It's not because anybody was trying to play fast and loose with the numbers, but because we are dealing with oftentimes new technologies, complicated manufacturing processes. I do not want to be in a position where, frankly, I come before the Congress and risk my credibility by saying that I'm absolutely certain about something when I'm not.

With respect to the cost figures on the B–2, I think we have it pretty well pinned down now. I think we have most of the risk out of the program in terms of knowing what the cost will be. But I don't know for certain. I won't know until we get some test flights under our belt and we see how well the aircraft actually performs.

The preliminary indications of the early run production models that are now in development are good in terms of our ability to learn from each aircraft and to reduce the number of man-hours, for example, that are involved in manufacturing each aircraft.

But it is a big, complex problem. If you have a 1-percent slippage, you're talking about $700 million or thereabouts.

So the caution that I think a number of people have sensed in my comments on it has been driven more than anything else by a desire not to mislead the Congress or demonstrate more certainty than we actually have.

If I have doubts about what a program is actually going to cost, I'll tell you that I have doubts and if you give me 6 more months, I'll know more.

Senator Rudman. Well, when you talk about the revolutionary airplane, which it is, are you speaking more of the airframe itself, the flying wing design, or the Stealth technology, or both? To which do you give the highest priority, I guess is what I'm asking.

Secretary Cheney. I think both. I would say they are both revolutionary.

I think the most significant thing I would argue is the Stealth feature, in part because it would allow us, if we had that capability today, to defeat virtually any air defense system in the world.

B–2 BOMBER

Senator Rudman. Mr. Secretary, what I want to talk about now is classified. So I can only talk about it in the broadest of terms.

But I would like to have an opportunity, Mr. Chairman, to talk about this in a classified session at some point, not necessarily with the Secretary, but with whoever he would designate.

Have you been presented in your fairly brief tenure—and you certainly have been busy—with the opposing views as to the potential for detection of Stealth through known technology that is deployable at a date probably as early as Stealth can be deployed? Have you been briefed on that by anyone?

Secretary Cheney. I've taken a pretty good look at our assessments of what the threat is against the Stealth. I have reviewed a number of studies in that area and I would be happy to pursue it with you on a private basis, or, if you wish, I can get some of our experts up here to sit down and go through it with you.

Senator Rudman. I think we should do that because, as you know, I have been a supporter of the B–2 up to this point as well, and may still be, for the kinds of reasons that you have so well stated.

But I think we have to be very careful to make sure that we look within our own Defense Department to see some of the other things that we are doing.

I just would like to continue this, Mr. Chairman, in a private session with whomever the Secretary would like to designate. I don't think we have to take his time.

But it seems to me that this is a very, very important aspect that we have to look at.

The reason I say that is I assume that we are going to continue to develop the advanced cruise missile. I assume that will continue.

Secretary Cheney. That is provided for in the budget.

Senator Rudman. It is.

Secretary Cheney. Yes.

Senator Rudman. Although I understand the psychological and cultural reasons for only wanting manned bombers to carry munitions to the target, if the threat to the Stealth technology in the not too distant future is, in fact, real, then one has to look very seriously at advanced cruise missiles as being a safer, more reliable, far less expensive way of delivering those same munitions to that same target.

I submit to you that I don't envy you your job because I truly believe that in the next 3 years, you will have to make that kind of decision. I hope that we can continue this dialog, that you and I can. But I would definitely like to look into this.

I know the chairman is aware of what I am speaking because we had a discussion yesterday on an ancillary subject in which the fit of these two issues became apparent.

Finally, very briefly, I'll ask for a quick answer on this one.

I notice that the Air Force Secretary, Mr. Rice, for whom I have enormous respect, made a statement several weeks ago about the Midgetman. I believe he said that funds beyond the $100 million requested for fiscal year 1990 would be unnecessary.

I wonder if, in light of what the President has said recently, which you have discussed in the course of this hearing, whether or not that is now still true?

Secretary **Cheney**. Well, the small ICBM package that I originally recommended, that we proposed when we first submitted the budget, partly because of time and partly because the small ICBM was added at the last minute, was financially constrained. We had a real problem with the outlay ceiling in 1990.

In effect, what we did was put $100 million into the budget for fiscal year 1990 and then ramp up to $200 million in 1991 and more in the out-years.

When I first submitted that, I highlighted that for everybody in testimony before the authorizing committees and said we were not happy with that funding profile, we needed to do more work on it, and I might want to come back later and recommend some changes in the funding in the out-years.

Subsequent to that, we made the decision and I submitted the reprogramming request to take $100 million in 1989 funds and apply them to 1990. So the total amount spent on the small ICBM in 1990 would be $200 million.

We also then, after some further analysis and work with the Air Force, concluded that we needed to add $947 million in the out-years, 1992 through 1994, to give us the IOC in fiscal year 1997.

That extra money there is primarily for development of the basing mode.

We think with that package that we now have, with the amendments that we have submitted and that we have agreed to, that we can, in fact, have a robust program, an efficient program, and that it will get us to an IOC in 1997.

Senator **Rudman**. Mr. Secretary, thank you very much. I just would add what some of my colleagues have said.

I served with you on the Iran-Contra Committee. I know the intensity with which you approach your job, and I am very pleased that you are where you are.

Secretary **Cheney**. Thank you, Senator.

Senator **Rudman**. Thank you, Mr. Chairman.

F-14D/V-22

Senator **Inouye**. Thank you very much.

Many of my colleagues have suggested that our national interest requires the maintenance of a robust defense-industrial base; that in order to meet our defense requirements, you would have to make certain that this base is healthy.

In your budget, we are terminating several projects—the F-14D, the Osprey, the V-22, the Mississippi Army ammunition plant, and the tank production facility in Warren, MI. It has been suggested that if these decisions are carried out and approved by the Congress, it would have an impact upon companies that we have relied upon all these years, such as Grumman and Bell.

Are you able to assure us that the remaining capacity, if my assumption is correct, that the remaining capacity is sufficient to protect our national defense requirements in aircraft production, shipbuilding, tank manufacturing, and helicopter manufacturing?

Secretary CHENEY. Senator, Mr. Chairman, I think we are. Obviously I would not want to be in a position where my budget decisions deprived us of that kind of capability in the future.

Obviously, the larger number of companies we have supplying the Department and providing important systems, capabilities, the better off we are going to be in wartime.

The greater our surge capacity, the greater our ability in peacetime to have competition between competing systems—all of those things are to be valued.

The problem, of course, is how much are you willing to pay for that.

If you look at the F-14D decision, I like the F-14D. It is a good aircraft. There are two production lines in effect. One is to rebuild the older models into the F-14D model. This is going to continue. This is alive and well and it is funded. We did not change that at all.

The new production line was operating at a rate of one a month, and the cost, depending upon which set of numbers you look at and what you include, ran somewhere between $51 million and $75 million per copy, to build 12 F-14D's a year.

This is a very high price to pay to keep that production line open.

I think, given the other contractors that are out there in the business, that have actively bid, for example, on the next generation of fighter aircraft, that we are, indeed, in a position—there has been no shortage of competition in that regard—we are indeed in a position to know that we will have the industrial base we need to meet our requirements in the years ahead.

If we continue, obviously, on the downward path that we have been on in recent years with respect to defense spending, and if I am forced to shut down other programs, then, clearly, we are going to run into trouble.

Areas to look at include Army aviation, for example. The original proposal for us in the original Reagan budget was to come forward and continue with a robust program to acquire Apache helicopters, to continue to buy the AHIP, the upgraded OH-58, with a mast mounted sight, and also go forward with the LHX.

I did not see any way that we had sufficient funds to continue to run all three of those programs as robustly as they have been.

So what we finally ended up doing and worked out with the Army was that after 1991, we'll close down the Apache production line. We'll have over 800 of them by then. We'd like to buy more. The original plan was to buy more; but we think that's adequate.

We'll close the AHIP production line now. We've got 207 of the AHIP's already. That is enough to equip the key forces that plan to use them. And we'll put our major emphasis with respect to the Army in that future investment in the LHX.

This is not a pleasant set of decisions to make, and it does have an impact on our industrial base. But I think you have to be prepared to make those kinds of calls if, in fact, we go through the tight budget situation that we are currently in.

So I am not insensitive to the problem. I do think that the choices that we have made are such that we have not put at risk our overall capacity, although, clearly, some companies will argue that they will have to change business or go into another line of work if we don't continue to fund their program.

I would add that Grumman is still very actively involved in things like JSTARS, for example, and the AH-6B and other systems.

Senator INOUYE. So in the decisionmaking process, you did take into consideration this factor?

Secretary CHENEY. Yes, sir.

Senator INOUYE. Mr. Secretary, your responsibilities, needless to say, are awesome and very important. You are new to this role. I am new to my role.

The problems before us are vast, complex, and difficult. But I think we have the responsibility of presenting to the Congress of the United States a budget that can be readily accepted and adopted by the Congress.

I would like to work together with you to bring this about.

1989 HEARING RECORD

We have held 31 hearings. This is the last of our series of hearings. I believe this subcommittee has heard from more witnesses than any other time period of my predecessors. I think we are the first to hear from the CINC's, from field commanders, from the commanders of the Nurse Corps, and hospital commanders. We have made every attempt to acquaint ourselves with the myriad problems that you are facing each day.

As you know, having served with us in the Congress, before we can present this bill, the hearing record must be published and available to the Members. So, it would be most helpful if your staff could have the answers available to us, because many members are going to be sending in questions for your response.

We'd like to present this bill in a timely fashion, so that we can finish our responsibilities by the end of the fiscal year.

Having said that, I would like most seriously to invite you to look over the transcript and to make any clarifying changes you wish to make, or to have addenda or supplementals, because this is the record upon which we must rely. This is the record that will tell us how to proceed and what to recommend.

I am well aware that, sitting there, oftentimes no matter how impressive you are—and you are most impressive, sir—mistakes can be made. So I hope that you will look over the transcript and make corrections if such are necessary.

We have now completed our fiscal year 1990 hearings, and I am most pleased that you are the closeup witness. I believe I speak for one and all here. You have been most impressive and your arguments have been most compelling.

I can assure you that several minds have been changed around here.

Secretary CHENEY. Mr. Chairman, thank you very much for the kind words. I have enjoyed our relationship over the years. One of the highlights of my career in Congress was serving with you and the gentleman from New Hampshire on the Iran-Contra Committee some years ago.

I look forward to having the opportunity to renew the relationship as the new Secretary of Defense, working with the new chairman of the Appropriations subcommittee.

We will do everything we can to respond as rapidly as possible.

Senator INOUYE. How does it feel, sitting there instead of here [indicating]? [Laughter.]

Secretary CHENEY. The world looks a little different from this side of the table, Mr. Chairman.

Senator INOUYE. Did you have anything else to say, Senator Rudman?

Senator RUDMAN. Thank you, but no.

SUBMITTED QUESTIONS

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

ARMS CONTROL AND FORCE REDUCTION

Question: Secretary Cheney, the President has proposed a ceiling on U.S. and Soviet forces in Europe at 275,000 each. You have suggested that a reduction of U.S. forces in Europe will lead to restructuring -- for example, the Army would be made lighter and more mobile. How do you see U.S. force structure changing if NATO and Warsaw Pact force reduction proposals are successful?

Answer: In a Washington Post interview, I suggested that if NATO and Warsaw Pact force reduction proposals are successful, we will have to address the question of whether U.S. forces should be restructured to become lighter and more mobile. This question, however, cannot be answered until the details of an agreement are negotiated. We do not yet know what type of equipment will be involved; how the reductions will be implemented; or how the Warsaw Pact will restructure. If, after seeing the results of these reductions, we feel that we should restructure U.S. forces, it should be an evolutionary process in order to ensure that we retain sufficient firepower to offset residual Warsaw Pact offensive capability.

Arms Control and Force Reductions

Question: Since the President is proposing to reduce US troops to 275,000, will this not result in a reduction of 50,000 troops instead of the 30,000 often mentioned in the press?

Answer: There are 305,000 Army and Air Force troops stationed in Europe; the number 325,000 includes Naval forces which are excluded from the CFE discussions. The 275,000 ceiling is for US stationed Army and Air Forces.

Question. The Congressional Budget Office (CBO) estimates that the President's force structure proposal would save about $2 billion in pay and operating costs annually. What are the Department of Defense savings estimates?

Answer. The actual savings resulting from the withdrawal proposed by the President would depend to a great degree on which forces were withdrawn. As the President's proposal did not identify specific forces, we are unable to develop accurate cost estimates of potential savings. The CBO recognized this and stated that their estimate of $2 billion in savings associated with the President's proposal was illustrative only, based on examples of the types of forces that might be withdrawn. When we are able to identify actual units to be withdrawn, we will be able to develop accurate savings estimates and will provide these estimates to the Congress.

Question: Given the President's proposal, is it still necessary to relocate the 401st Tactical Fighter Wing from Spain to Italy? CBO estimates that cutting this unit as part of the arms control proposal would save an additional $400-500 million.

Answer: CFE negotiations will not eliminate our requirement for visible evidence of our modern, flexible, immediately available military strength to the Southern Flank of NATO. It is an important commitment to the region, and helps perserve the bond between the Southern Region and the rest of NATO. We would not allow the dual capable F-16 C/D model aircraft to be destroyed under CFE. Potential CFE negotiations may help solve our congested flying problem in the Central Region however, it will not open up a main operating base in the Southern Region. NATO's strength in the flanks becomes more important if CFE thins out the Central Region. In its strike role, the Wing represents a large percentage of the Southern Region's third generation aircraft capability. Cumulative loss of both GLCM and the 401st TFW in its strike role could shift the overall strategic balance in the Southern Region in favor of the Warsaw Pact. A reversal in the US position to support funding the 401st TFW relocation to Crotone would seriously affect our ability to support flexible response in the Southern Region, complicate NATO's nuclear modernization process and drive at least an interim wedge into our relations with Italy.

Question: Mr. Secretary, your budget proposes substantial cuts in forces stationed in the U.S., but only minor cuts in forces overseas. Why are the force structure reductions you recommend not balanced between U.S. and overseas?

Answer: The proposed budget reflects our continuing commitment to maintain our forward deployed forces in support of treaty obligations around the world. To unilaterally reduce forces overseas, especially in Europe during the Conventional Forces Europe (CFE) negotiations, would serve to undermine our bargaining position and send the wrong message to our allies and the Soviet Bloc.

Question: Prior to the President's proposal, the force structure reductions recommended by DoD have been from domestic forces instead of overseas. Will this new proposal cause you to reconsider planned domestic cuts such as the brigade at Ft. Carson or on U.S. based fighter wing?

Answer: Certainly any change in the decision-making environment will cause us to reexamine our decisions and make any necessary adjustments. However, one of the most important considerations will be to retain our most modern, capable, and robust force structure. For the most part, these are forward-deployed units. Additionally, with the ongoing CFE negotiations, now is not the time to unilaterally reduce combat forces in Europe.

Question: If we are reducing our forces overseas can we also reduce the forces at home which provide the overseas troop rotation base?

Answer: It would appear logical that if we have fewer troops overseas, we would require fewer troops to form a rotation base. However, there is not a direct one-for-one correlation between troops deployed overseas and troops in the rotation base. The exact size and relationship between the two is dependent upon the type of unit/mission to be reduced and the immediacy of the threat to be countered.

ARMS CONTROL IMPACT ON PROCUREMENT

Question: Secretary Cheney, the President's proposal also would reduce weapons in Europe cutting armored equipment and tactical aircraft. How does the President's proposal impact on your procurement plans?

Answer: The President's proposal, adopted by the Western Alliance underscores the need to continue our modernization efforts. These efforts are reflected in the current procurement plans.

Question: Mr. Secretary, the weapons we buy this year will be delivered in 1992, the same year proposed for the cuts. Why should we buy items now only to destroy them when they are delivered?

Answer: We are NOT buying items that will be destryoed. The equipment in the procurement plan is to modernize our forces. None of it will be considered for destruction. In most instances, reductions in equipment will come out of older equipment in war reserve (WR) stocks. In those cases where the reductions involve active units, older equipment (WR) will be desposed of and newer equipment from the active unit will replace it.

Specific replacement strategies are as follows:

- M1A1 tanks will go to forward deployed units or replace older systems in WR. If fielded, M1A2's will go to front line units and displace tanks will go to WR. If reductions are required, approximately 3,000 M60 series tanks will be be the first withdrawn from US inventories and either destroyed or transferred to a NATO ally.
- M2/M3A2 Bradleys will be fielded to replace M113's in Mechanized Units. Displaced M113's will be transferred to other units with shortages, such as combat engineer units. If necessary, reductions or transfers will be made from this pool of older vehicles.
- MLRS is being fielded on a 1-for-1 replacement basis in 8" artillery Battalions through year 2000. there will be about 370 MLRS launchers in FY96. Also, the Howitzer Improvement Program will be in progress, but this will upgrade about 1700 of 2500 existing 155mm howitzers, and can be tailored to fit emerging changes as negotiations proceed.

- Helicopter cuts will also be absorbed by aged systems in theater. Among the first to go will be some of the US's 1,900 OH58A's, so helicopter modernization plans are not jeopardized.

Question: Mr. Cheney, you have suggested that we may need to move to lighter more mobile forces if the arms control proposals of President Bush are adopted, but your budget request was not built on this assumption. What changes should be made in your FY 1990 request for investment programs to reflect the trend to lighter forces?

Answer: Actually, no changes would be required for the FY 1990 request. The lighter more mobile forces mentioned will be CONUS-based forces needed to meet our global commitments. Most of our current procurement plans are to modernize our forward based forces in Europe and the Pacific. Restructuring of CONUS-based deployable forces is addressed in the current submission and changes required when an arms control agreement is ratified and implementation has begun will be reflected in future submissions.

Question: Mr. Cheney, your budget plans to terminate the F-15E after 1991, reducing the number of F-15E's from 392 to 200. One wing is sheduled for Europe, the other for the Pacific. Are you concerned that the Soviets would propose destroying the European deployed F-15E wing if President Bush's arms control proposals are implemented?

Answer: No. Both proposals, West and East, set only a ceiling for combat aircraft as a category. Neither is aimed at any specific type of aircraft or at dictating to the other side what aircraft it will maintain or how it will structure it's air forces.

Question: For the record, provide all the items in the budget which are being purchased for use of our forces deployed in Europe and would be subject to the proposed arms control limitations.

Answer:

SYSTEM	FY89	FY90	FY91	FY92	FY93	CFE CATEGORY	CFE CAP
M1 series	555	448	261	516	516	MBT	20,000
M2/M3A2	581	600	600	600	600	ATC	28,000
MLRS	29	29	29	29	29	ARTILLERY	16,500
AH64	72	66	66	0	0	HELICOPTERS	1,900
MH/UH60	72	72	72	60	69	HELICOPTERS	1,900
F-16C/D	180	150	150	150	150	COMBAT A/C	5,700
F-15E	36	36	36	0	0	COMBAT A/C	5,700

Source: FYDP dtd April 1989

Question: What is your assessment of the requirement for U.S. troops in South Korea? Do you think we can safely reduce our forces to a brigade?

Answer: The requirement for U.S. troops in South Korea remains because of the continued and qualitatively improving threat from North Korea. Korea is the tinderbox of Asia and the likelihood of conflict is higher there than perhaps anywhere in the Pacific.

Technically, a state of war still exists on the peninsula with the current uneasy peace the result of an armistice agreement between the armed forces of North Korea and the United Nations Command (UNC) rather than a peace treaty between North and South. Two of the largest armies in the world are maintained in a wartime posture and face each other across the Demilitarized Zone (DMZ). North Korea has long sought unilateral reductions in U.S. forces as a primary foreign policy objective. Linking U.S. force adjustments with meaningful tension reduction measures by the North would place responsibility for alleviating the current confrontational situation on Pyongyang where it belongs. Until such North Korean measures are undertaken, the aggressive nature of the North Korean regime, the extreme forward deployment of its forces, and the proximity of Seoul to the DMZ require that a strong combined deterrent be maintained.

Any adjustments in U.S. forces strength must not be set at an arbitrary numerical level but rather must be made on a planned and detailed basis. Either the Republic of Korea (ROK) armed forces must assume some of the roles and missions currently performed by U.S. forces or tensions have to be reduced between the North and South. It is possible for adjustments to be made but stability and deterrence must be maintained. There is a point below which a reduced U.S. force presence will no longer provide a deterrent effect and will call into question the strength of the U.S. commitment to South Korea's defense. The exact level of tolerable reduction will have to be addressed by appropriate military commanders and the JCS.

Question: Can such a reduction be undertaken unilaterally? What treaty commitments does the U.S. have with South Korea, Japan or the United Nations that would require consultation on any reduction?

Answer: The United States has treaty commitments with both Japan and Korea that call for consultations in the event either party to the treaties is attacked. As a matter of practice, past adjustments in allied force structure have been fully discussed and coordinated with these allies. With regard to the United Nations (UN), the United States provides the Commander and all the personnel in the headquarters of the United Nations Command under the terms of a UN General Assembly Resolution of July 1950. Under the terms of this resolution, the U.S. performs armistice affairs functions under United Nations authority. While there are no legal impediments to making unilateral force reductions, any changes on the Korean peninsula would affect vital Korean and Japanese defense interests. Common sense would require us to consult with our Korean and Japanese allies. Likewise, any force changes that affected armistice affairs would also indicate a moral, if not legal, requirement for discussion with the United Nations.

Question: If you were asked to rank the relative importance of our forces stationed in Asia and the Pacific -- how would you rank our forces in Korea?

Answer: The U.S. forces stationed in Korea not only directly deter aggression from the North, but also contribute to regional stability throughout Northeast Asia and indirectly to the defense of Japan. They represent the only U.S. Army forces in the Pacific west of Hawaii and are a key element of our forward defensive posture in the Pacific. U.S. forces in Korea must be ranked at the top of the list if we are to maintain our forward deployment strategy and our treaty commitments to the Republic of Korea.

Question: Recent events in China remind us that the world is a dynamic environment subject to constant change. What, if any, impact have these events had on our forces in Korea?

Answer: Recent events in China have not yet had a direct, discernible effect on U.S. forces in Korea, but there may be more subtle, indirect and possibly long-term effects on the stability of the Northeast Asia region. The turmoil inside China may reduce Beijing's leverage with North Korea and lessen a force for restraint on the North Korean regime. The emergence of a hardline government in China may presage increased military assistance to the North. Some preliminary warming of relations between Beijing and Seoul may also be slowed as the Chinese government focuses its energy on internal issues. These are speculative judgements that make even more important the maintenance of stability in Korea.

Question: Do these events provide any additional justification for our presence in Korea?

Answer: In a general way, the events in China bring to the forefront the geographical significance of Korea which is at the intersection of the interests of four great powers; China, the Soviet Union, Japan and the United States. Stability in the region is in the interests of all and has contributed to the enormous economic and political progress within South Korea and the region. The stability that U.S. forces contribute to both the peninsula and the region at a time of political turmoil in China, provides additional justification for the American military presence in Korea.

Question: Secretary Cheney, it seems as though the Department's proposed force structure changes cut tooth and no tail. A combat brigade, two Air Force wings, a carrier, numerous combat ships, and almost 17,000 end strength are proposed for elimination. Yet, no reduction in general officer billets or division flags is proposed. Of the $1.5 billion cut in Operation and Maintenance--none of the reduction was made against Administration. Cannot reductions be made in the support structure commensurate with the reductions you have peoposed in our combat forces?

Answer: The FY 1990 and 1991 budget revisions do provide for reductions in administrative and overhead functions. The Defense Wide Contingencies section of the budget revision contains reductions of $286.1 million and $433.6 million, respectively, in FY 1990 and 1991 to reflect further personnel savings from projected efficiencies to be derived from management improvements throughout the Department. These are being addressed in the Defense Management Review which is now in progress.

Additionally, the budget revision also provides for

reductions in administrative and overhead functions at the Defense installations worldwide. Base operations support has been reduced by $341.0 million and $393.4 million, respectively, in FY 1990 and FY 1991. This reflects not only the "tail" related to the force changes but also direction to the Military Departments to evaluate current base operations and to develop more efficient ways to provide essential base services.

OVERHEAD COSTS

Question: Mr. Secretary, one of your staff, Chuck Spinney, has written in the Washington Post that significantly greater savings could occur by eliminating Air Force units and bases rather than downsizing various units as is now proposed in the budget. Spinney argues that during the past thirty years the "creeping mismatch between infrastructure and force size has relentlessly driven up overhead costs." Do you think it makes sense to "shave" forces and downsize various aviation units as is proposed by the Air Force, Navy, and Army? What is your assessment of Mr. Spinney's thesis?

Answer: Mr. Spinney's April 16, 1989 article failed to address several major issues that must be considered prior to any decision to restructure the active and reserve forces. The primary consideration in any restructuring decision must be potential savings juxtaposed with potential losses in military capability. The Department must therefore consider the ability of the total force to respond to major contingencies short of mobilization; the political and readiness consequences for our security partners; the impact on reserve experience levels and associated training costs should we reduce the active force below its capability to support reserve manning needs; the impact upon the active duty force as it loses the cockpits required to absorb and train enough pilots to sustain its own aviator requirements; and the affordability of near term construction and other "start up" costs required to relocate aircraft to specific locations. We are firmly convinced that the Department's planning, programming, and budgeting system is the management system best structured to perform such detailed analyses.

B-52 Requirements

QUESTION: Secretary Cheney, in our hearing so far, we have heard from several witnesses about strategic bombers. It seems you plan to spend billions on the B-2, spend over a billion to fix the B-1B, but also plan to keep B-52's in the inventory as both cruise missile carriers and as conventional bombers.

Mr. Secretary, how can we afford to invest in both the B-1 and B-2 and still keep the aging B-52's in the inventory?

Isn't there some way to reduce the requirements for all these bombers?

ANSWER: The numbers of bombers required are determined from requirements established for SIOP targeting and conventional missions. The level of bomber force structure has remained relatively constant for several years. We have retired several B-52 squadrons and others are scheduled for future retirement as the B-2 becomes operational. The requirement for a fixed number of arriving weapons drives the size of the bomber force. We are merely optimizing these weapons on bombers available.

The B-52 force will undergo minor restructuring during the 90s, but the B-52 will be part of the bomber force into the 21st century. Though it was intended for the B-52G ALCMs to retire as the B-2 entered the inventory, those plans have changed due to delays in the B-2 program. The Air Force believes there is a prudent military requirement for retaining ALCM B-52Gs in a SIOP standoff role until the B-2 can achieve an operational capability, after which a number of ALCM B-52Gs will transition to the dedicated conventional role.

There are no current plans to retire B-52H aircraft. The cruise missiles carried by the B-52H are an ideal asset to attack some fixed-targets of the bomber mission. Further, cruise missiles improve the performance of penetrating bombers by increasing force mass.

B-1B ECM

QUESTION: Secretary Cheney, CINCSAC says the B-1B is the best bomber in the world and can penetrate Soviet airspace today, do you agree with his assessment?

If so, why can we not forego fixing the ECM system on the B-1B bomber and plan to use it as a cruise missile carrier when it no longer is able to penetrate Soviet airspace?

ANSWER: Yes I do. Our bomber force structure assumes that at some point in the future, the B-1B will transition, similar to what the B-52 has done, from a strictly penetrating role to a shoot and penetrate, and then to a standoff role. The ECM threat faced by the B-1B in any of these roles is growing. As the Soviets expand their detection capabilities beyond the shore with airborne and fleet ECM platforms, any standoff delivery vehicle must be capable to penetrate this deployed threat to reach a point where cruise missiles can be launched to their targets. This point is set because of cruise missile range. Our bombers must be equally capable to delivery weapons in a conventional role where the ECM threat can be as great as the ECM threat found in a strategic nuclear environment. The ECM fixes proposed for the B-1B will give it the capability to endure these future threats to deliver its weapon load.

QUESTION I understand that we have already done some cruise missile testing on the B-1B. Why can't we complete that effort now and then modify the B-1B as cruise missile carriers as necessary if START counting rules permit it?

ANSWER: ALCM testing on the B-1B has been completed, demonstrating a cruise missile carriage and launch capability.

The only test activity remaining before complete cruise missile operational certification is ALCM nuclear certification. This activity is on hold pending agreement on START.

Advanced cruise missile testing on the B-1B has been delayed pending further missile development activities.

Completing all testing and certification now and modifying the B-1Bs later can, of course, be done when cruise missile assets are fully mature and ready for testing on the B-1B. However, a possibility certainly exists that software or hardware modifications to either the B-1B or cruise missile will require retesting these new configurations prior to any cruise missile modification, carriage, and deployment on the B-1B. Flight and nuclear safety procedures require all flight configurations be fully tested and certified. The chances that flight testing will have to be reaccomplished are high, and prudence suggests delaying any additional cruise missile/B-1B testing until such modifications become necessary for cruise missile operational employment.

Bomber Priorities

Question: Mr. Secretary, I understand CINCSAC's desire to keep four separate bomber programs -- B-1, B-2, B-52H (cruise missile carrier) and B-52G (conventional bomber), but as Secretary of Defense you must make tough trade-offs. Would you rather see additional cuts in the B-2, reductions in the B-52 fleet or denial of the funds to fix the B-1B?

Answer: Since the budget conforms to the budget summit agreement, there is no need for additional cuts to the B-2, B-1, or B-52. Each one provides unique capabilities and each one makes a significant contribution to the national security. Reductions to any of these programs would add an unacceptable level of risk to our deterence posture and weaken our negotiating position at a time when we are attempting to reach balanced strategic arms reductions with the Soviet Union.

MX RAIL GARRISON/SMALL ICBM TRADE-OFFS

Question: Secretary Cheney, last year Admiral Crowe testified that funding the Small ICBM would require an unacceptable diversion of funds from other programs. Last week, you informed Congress of your plans to add $947 million to the Small ICBM program in FY 1992-1994. What has changed to make this an affordable option?

Answer: After review of strategic modernization options, the President determined that a combination of the Small ICBM and Rail Garrison is the best way to provide maximum survivable strategic capability. The decision to pursue these two systems sequentially made this option affordable.

Question: Secretary Cheney, what programs will you reduce to finance the additional cost of developing the Small ICBM in the future years?

Answer: Any adjustments required will be made during the comprehensive review of the budget we will undertake this Fall.

Question: I understand you believe the funds in the FY 1990 budget are sufficient to maintain the planned schedule on the Small ICBM. Would you oppose attempts to increase funding for Small ICBM to accelerate that schedule?

Answer: Yes. The current planned sequential development of the two mobile systems provides the most affordable means of meeting our strategic modernization requirements.

Question: There has been some discussion that the country cannot afford two new land based ICBM programs. Under the assumption that only one new ICBM would be produced, would you prefer the MX rail garrison or the Small ICBM?

Answer: I believe that we do not have to make a choice as the sequential development of MX rail garrison and Small ICBM is an affordable option.

Question: Some members of Congress have suggested that funds on the MX should be linked to the Small ICBM program. What is your view of such a proposal?

Answer: I do not see a need for such linkage as the Administration fully supports both programs on the schedule proposed.

Tactical Program Trade-Offs

QUESTION: Mr. Secretary, your budget recommends the early termination of several current generation tactical weapons programs, including the Apache helicopter, the F-14 and F-15 fighters, the AHIP helicopter, the M-88 tank recovery vehicle, the Phoenix missile and the SSN-688 submarine. In almost all of these it appears you are willing to sacrifice near term production to protect future follow-on programs. Was this a planned strategy or is it just coincidence?

ANSWER: In amending the budget, the Department evaluated the transition between systems in the final years of production and their follow-on, next generation replacements. In several instances, production was truncated since the degree of risk in transition to the follow-on system is acceptable. This was done to preserve more economic production rates for other major production systems and to maintain development of the next generation replacement systems.

QUESTION: The decision to terminate the F-14 this year and F-15 after 1991 means we will not produce any "true" air superiority fighters until the Advanced Tactical Fighter comes into production sometime in the mid- to late-1990's. Recognizing the difficulty you faced in reducing the budget, can you assure this subcommittee that these decisions were appropriate?

ANSWER: The decision to terminate the F-14 and F-15 aircraft programs was reached after careful consideration of our current force structure, aircraft inventory levels and affordability. In both cases, the planned reductions in force structure (from 15 to 14 deployable aircraft carriers and from 35 to 33 active air wings) meant that there was an adequate number of aircraft already programmed to support operational requirements. In addition, it should be noted that the F-15E scheduled for termination in FY

1991 was intended to serve as a deep interdiction aircraft rather than as an air superiority fighter. There are sufficient F-15 aircraft in the Air Force inventory to carry out the air superiority mission until the Advanced Tactical Fighter (ATF) is ready for production. While it is advantageous to maintain a "warm" production base for current generation aircraft pending transition to the ATF, fiscal constraints have forced the Department to accept a moderate degree of risk. Both the F-14 and F-15 were nearing the end of their planned production runs in the FY 1990-94 period and were scheduled to be produced at inefficient rates of production thereby significantly increasing unit and total program costs. The capability improvements provided by the next generation ATF were determined to be a better investment opportunity than procurement of additional quantities of F-14 and F-15 aircraft.

QUESTION: Mr. Secretary, it seems that you traded the AHIP and Apache helicopters for the future light helicopter, LHX. Is this accurate?

ANSWER: The budget amendment required difficult decisions concerning the relative priority of Army aviation programs. The LHX remains the centerpiece of the Army's Aviation Modernization Plan, therefore, funding was provided to protect this future capability. Procurement of the AH-64 Apache helicopter through FY 1991 will provide 807 aircraft in 40 battalions. The 40 battalions will ensure that all the first-to-fight units in Europe will be outfitted with AH-64 helicopters. The LHX will complement the AH-64 Apache, increasing its lethality and survivability while improving the overall warfighting capability. The AHIP was terminated because the $1.6 billion cost to modify the remaining 168 aircraft in FY 1990-94 was not cost effective for a marginal, interim capability. The residual AHIP inventory is 207 helicopters, of which, 90 will be deployed in Europe and 6 in Korea.

QUESTION: Are you confident that the LHX program will be a cost effective alternative to continuing production on these programs?

ANSWER: I am confident that the LHX will fill a vital need in the battlefield of the future. All the analyses conducted to date indicate clearly that the LHX is the most cost effective system to fill the armed reconnaissance and light attack mission. There are ongoing Cost and Operational Effectiveness studies that will revalidate the need and provide additional confidence before the LHX enters Full Scale Development.

QUESTION: Mr. Secretary can you assure us that we will have adequate capability to respond to crises with the weapons systems levels included in your budget request?

ANSWER: Despite the reductions involved in the amended budget, a significant amount of new, improved warfighting capability is funded in FY 1990. The list ranges from M-1 tanks and Bradley Fighting Vehicles to F-16 and F/A-18 aircraft to thousands of tactical missiles to the MX and TRIDENT II strategic missiles to $19 billion of support equipment in the other procurement accounts. The Department has made every effort to balance the funding reductions in such a way as to minimize the increase in risk, however, some increase is inevitable with a major budget reduction.

Aircraft Carrier Plans and Impact

Question: Secretary Cheney, you propose to retire two older aircraft carriers as replacements enter the fleet. This will hold the Navy at 14 deployable aircraft carriers instead of its planned 15. Several Navy witnesses testified that its requirements are still based on a 15 carrier Navy. Are you aware of this apparent inconsistency and what does this budget request do to balance other Navy equipment requirements with the reduction in carriers?

Answer: There is no inconsistency in the position that our military requirement is 15 deployable carriers. Fifteen carrier battle groups represent a well established planning goal within the Department, and the decision to accept one less carrier battle group was difficult but necessary given the reality of declining funding levels. The Navy budget reflects the constrained force level of 14 carriers by terminating the production of new construction F-14D aircraft, eliminating EA-6B new construction after FY 1989 and reducing the annual construction rate of F/A-18 aircraft to 66 aircraft per year in FYs 1990-94. These actions will reduce naval aircraft inventories to a level which will adequately sustain the operations of 14 carriers.

Question: Mr. Secretary, the Navy still plans to have 13 active and two reserve air wings even though it now will have one less carrier in the future. Why, when you decided to retire one carrier did you not also stand down one air wing?

Answer: A minimum of 13 active air wings and two reserve air wings are required to support 14 deployable carriers. With 13 active air wings and careful planning, we are able to maintain the requisite flexibility during peacetime to forward deploy our carriers in a manner consistent with operational and personnel tempo considerations. Reducing air wing force structure further would require greater reliance on the cross-decking of aircraft, reduce active squadron flight training, accelerate aircraft usage resulting in a more rapidly ageing inventory, and would significantly hinder our efforts to retain pilots due to the extended deployments required to meet operational requirements.

Question: The latest Navy aircraft requirements report is based on supporting 15 aircraft carriers. Do you anticipate that we will be reducing our requirement for carrier aircraft as we recognize that we are no longer planning to have 15 carriers?

Answer: While the Navy aircraft requirements report was based on a 15 deployable carrier fleet, the Navy's budget was based on aircraft procurement to support 13 active and two reserve air wings which represents the minimum force level required to meet our current commitments. In recognition of fiscal constraints the Department has already taken action to reduce naval procurement to better align aircraft inventories with the decision to retain 14 deployable aircraft carriers. Further reductions in carrier aircraft are not anticipated.

Question: Secretary Cheney, we are hearing that the Civilian Health and Medical Program of the Uniformed Services — CHAMPUS — is again in financial hot water. Current projections indicate that, by the end of June, CHAMPUS will owe up to $200 million more in claims than it has.

Has the Department been able to make any determination as to what has caused this $200 million deficit in CHAMPUS funding?

Answer: The Department has identified recently a dramatic growth in CHAMPUS costs and workload in May 1989. This surprise spurt concerns us greatly since CHAMPUS program stability achieved for the last year and a half is now in jeopardy. Our first review shows a nationwide, across-the-Services cost growth except in the CHAMPUS Reform Initiative (CRI) states (California and Hawaii) where costs are fixed by contract. Equally as important, preliminary analysis indicates a reduction in workload in the direct care system and a corresponding increase in CHAMPUS workload. Program review indicates a $107 million shortfall through the end of May.

The Department is now performing an extensive analysis in coordination with Service medical managers to revalidate the estimate of CHAMPUS requirements. Preliminary analysis has uncovered no single factor which fully explains the increased CHAMPUS costs.

Question: The Department has actually projected savings in the FY 1990 CHAMPUS budget because of all the initiatives in place to reduce the rate of growth in health care costs. Is there any assurance that CHAMPUS has not been seriously underestimated in FY 1990?

Answer: The Department has employed several approaches to contain the excessively rising costs of the CHAMPUS program. Payment reforms, essentially limiting what we pay for virtually the full range of health services, have been a major factor in cutting the rate of growth in CHAMPUS costs from 25 percent per year to 6 percent per year. The programs include the use of a diagnosis related group-based payment system for most general hospital care, fixed per diem rates to pay for care in psychiatric hospitals, the Medicare Economic Index to limit fee increases for physicians and other individual providers, and the Peer Review Organization program to assure quality and appropriate utilization. The savings impact of these programs is nearly $500 million in FY 1990.

The Department's managed care projects, testing new and innovative ways of doing business, are another approach for containing CHAMPUS costs. Three broad based managed care demonstrations currently are being developed and implemented: the CHAMPUS Reform Initiative, Catchment Area Management, and Fiscal Intermediary Preferred Provider Organizations. Through businesslike arrangements for establishing a new reimbursement contracting methodology, the use of preferred providers who have contracted to treat beneficiaries at discounted rates, and voluntary enrollment for exclusive use of preferred providers, the managed care initiatives, still being implemented, tested, and evaluated, offer the potential for substantial savings.

The Department remains optimistic but cautious about projected savings through individual Service initiatives which seek to improve the productivity of military hospitals in an effort to affect CHAMPUS savings. The Services project a recapture of 11,000 admissions and 129,000 outpatient visits during the first year of operation, spanning into FY 1990, of the forty approved Alternate Use Test projects in the process of being implemented. Projected savings are $18.5 million. Service management initiative programs, investment specifically aimed at increasing utilization of military medical facilities, are projected to produce bigger savings. The Department's current CHAMPUS spending estimates have been reduced $252 million in FY 1990, a ten percent cut from what CHAMPUS would have cost without this program.

Question: The Office of the Assistant Secretary of Defense for Health Affairs is now vacant. It seems to me that, at a time when health care in the military is in a state of chaos, this is one position that really should be filled. Are you likely to be able to fill it in the near future?

Answer: Although the ASD(HA) position is technically vacant, we have appointed an Acting ASD(HA) -- David Newhall, III. I am confident in Mr. Newhall's ability to perform the duties of ASD(HA) until such time that we are able to permanently fill this position. We are taking action to fill the position at the soonest possible time.

QUALITY OF LIFE

Question: When I have been out talking with members of the military, they do mention compensation. But they also talk about quality-of-life issues that are as important to them as money -- things like access to medical care, decent housing, and adequate child care facilities. It seems to me that these are extremely important recruiting and retention incentives. What initiatives within the Department are being taken to address these concerns?

Answer: Quality of life in the military is extremely important to recruit and retain qualified men and women and to motivate them to perform up to their abilities. The Department is taking several actions to improve the quality of life of its military members and their families. To ease the problem of access to medical care, aside from CHAMPUS, major initiatives include establishment of PRIMUS and NAVCARE clinics (contractually operated extensions of military medical treatment facilities); establishment of agreements with the Department of Veterans Affairs to use their medical facilities on a reimbursable basis; and establishment of the Uniformed Services Active Duty Dependents' Dental Plan. While existing housing allowance systems (OHA and VHA) are working well, the Department is reviewing its housing policies and programs to ensure adequate housing for all members who must reside in nonmilitary quarters. In addition, the Department initiated facility improvement programs for on-base housing such as the $24 million Air Force program, "Creek Positive," that will save more than $30 million in change-of-station expenses by increasing voluntary tour extensions in Europe. Creative financing and privatization is also being pursued to provide family housing and child care centers. Furthermore, the Department recently published detailed standards for the establishment and operation of child development programs, including facility requirements; fire, safety, health requirements; staff/child ratios; and staff qualifications. The Department operates 639 child development centers worldwide. In addition, there are about 12,000 family day care homes that care for up to 6 children in each home. The Department believes that achieving and sustaining adequate living standards for those providing our Defense is essential and of the highest priority. With the help of Congress, we will continue to pursue and sustain a deserving quality of life for our military personnel and their families.

RECRUITING TOOLS

Question: What do you consider the most important recruiting tool available to the services now?

Answer: There isn't a single most important recruiting tool. To sustain adequate recruit numbers and quality, the active and Reserve Components must remain competitive in the youth market. Service in the military must be desirable. Reasonable pay and living conditions for members and their families are important. Successful recruiting also requires sufficient numbers of recruiters, recruiter support resources (such as facilities, telecommunications, vehicles, etc.), advertising, and competitive enlistment incentives. These resources are required to ensure that prospective enlistees are contacted, informed of available military opportunities and benefits, and provided a chance to enlist. The resources requested in the FY 1990-91 budget coupled with new legislation to increase the bonus and supplemental educational benefits that can be offered for enlistment into critical skills should provide the tools to achieve our recruiting goals cost effectively.

RECRUITING OF HEALTH-CARE PROFESSIONALS

Question: Is the military placing any special emphasis on recruiting of physicians, nurses and other health caregivers in short supply?

Answer: The Joint Recruiting Advertising Program targeted 5 percent of its available Fiscal Year 1988 resources on a national newspaper campaign specifically designed to create awareness of opportunities for military nurses, and conducted a similar program for physicians using 5 percent of its Fiscal Year 1989 funds. This was the most aggressive national recruitment advertising campaign for health care professionals ever conducted by the Department of Defense. The program was designed to support the active and Reserve components of all Services. The nurse campaign produced nearly 1,200 inquiries from interested nurses or nurse students. The physician campaign, which began in April and ended on June 30, has generated 1,170 letters from physicians and medical students. Additionally, each Service has specific advertising targeted to health care providers.

NURSE SHORTAGE

Question: The military is now having to compete more vigorously than ever with the civilian community for nurses. There is a nationwide shortage which appears to be worsening rather than getting better. It has been suggested that a possible solution to the shortage of nurses in the military might be a federal nursing school similar to the Uniformed Services University of the Health Sciences for doctors. Would you consider a federal nursing school a viable option to alleviate this nurse shortage?

Answer: We are using every means within the Department's authority and resources to deal with the nursing shortage. As a part of the overall review of possible financial assistance incentives for nursing education, the Military Departments are examining the feasibility of establishing a uniformed services school of nursing. Still in the data collection and analysis stage, it is too early to predict what the Services' findings and recommendations will be. In the absence of even preliminary findings, it is premature to make an informed judgment about the advisability of a DoD-sponsored nursing school. A DoD position can be determined after thorough analysis of the results of the Services' cost-benefit study.

SAC Hearing on DoD Wrap-Up

QUESTION. Secretary Cheney, the National Space Council has been reviewing the National Aero-Space Plan (NASP) program because of your decision to reduce Defense funding for it and transfer it to NASA. What options are being considered to continue the Pentagon's role in the NASP program? Is it affordable?

ANSWER. The options involving continued participation by the Department of Defense that are being considered by the National Space Council range from continuing the program in accordance with President Reagan's Fiscal Year 1990/91 Budget to continuing the program in a more measured way to reduce the degree of technological uncertainty before a decision on an experimental flight vehicle is made. With regard to affordability, it was my judgment that the NASP program as defined by President Reagan's budget was not affordable by the Department of Defense within the constraint of the new budget guidelines.

QUESTION. Why did you decide that the NASP program was not a Defense Department priority and would be more appropriately managed by NASA?

ANSWER. Funding the NASP program in accordance with President Reagan's budget would have required $300 million in Fiscal Year 1990 and $1.95 billion during Fiscal Years 1990-1994. Given the high degree of technological uncertainty associated with the NASP program, the offsetting reductions required in other priority programs could not be justified. Inasmuch as DoD could not provide full funding support for NASP, it seemed appropriate that NASA manage the program in order to continue to develop the technology, hopefully to the point where a reasonable assessment of the prospects for an experimental flight vehicle could be made.

QUESTION. Do you agree with the Air Force assessment that NASP has very limited technology benefits for the Defense Department?

ANSWER. It is difficult to make an assessment of the actual technology benefits which would be derived from the NASP program. A major feature of the NASP program is the extraordinarily high degree of technological risk and uncertainty involved. If successfully developed, much of the technology associated with the NASP program would be applicable to other DoD systems: advanced materials and computational fluid dynamics are two examples. On the other hand, the degree to which the technology can be successfully developed is unknown. It is also true that this technology would provide higher benefits to NASP-like systems than to systems with less demanding missions, and that further technology development work would in general be required to apply this technology to other systems.

QUESTION. How does the military utility of the National Aero-Space Plane compare with that of other Defense Department programs, especially those to improve U.S. space launch and aerial reconnaissance capabilities?

ANSWER. Studies have been made of the potential military utility of vehicles which could be derived from NASP, and have shown that, in particular, rapid access to space would provide a significant increase in our space launch and aerial reconnaissance capabilities. Again, the major issue is the high degree of technological risk and uncertainty involved. If the risk and uncertainty is favorably resolved, then NASP-derived vehicles will be useful. However, obtaining such a resolution will require several years, and hence the potential military utility of NASP can not be realized until well after the turn of the century. Our other efforts to improve space launch and aerial reconnaissance capabilities will, for the most part, be operational well before any NASP-derived vehicle.

QUESTION. If the National Space Council recommends adding more Defense Department funds to the NASP program, what would be the impact of diverting funds from other priority programs to the NASP program?

ANSWER. The general impact would be proportional to the funding amount which would have to be diverted. The specific impact cannot be stated until the funding amount is known and an assessment is made of alternative funding sources to determine the least harmful manner in which to make such a diversion.

QUESTION: Mr. Cheney, in Deputy Secretary Atwood's confirmation hearing, he stated that you intend to delegate the responsibility for DoD acquisition to his office. Mr. Atwood further indicated that the Undersecretary of Defense for Acquisition would be under his direct line of supervision. Is this a correct statement of your policy regarding the relationship of the Undersecretary of Defense for Acquisition and your office?

ANSWER: The Deputy Secretary of Defense will serve as a full alter-ego to the Secretary of Defense. He will exercise authority, delegated by the Secretary, on all matters in which the Secretary is authorized to act. He will also have responsibility, with the Secretary, for ensuring the full implementation of acquisition and other management reform initiatives. The USD(A) will have the full confidence and active support of the Secretary and Deputy Secretary as their principal staff assistant on such matters. He will have full access to both officials.

QUESTION: Mr. Cheney, according to press reports, over 10 candidates have turned down the position of Undersecretary of Defense for Acquisition. Why are you having such a hard time filling this and other key DoD positions? (such as the Army Secretary) What has been the impact on overhauling defense management?

ANSWER: As reported in the news media, there has been some difficulty in filling certain key executive level positions within the Department of Defense. Among the reasons for this are: legal restrictions on post-employment activities of senior officials after their departure from government service; major salary reductions that frequently accompany the transition from private to public sector employment; federal personnel financial disclosure requirements; and the requirement that candidates for selected positions divest themselves of specific financial holdings or enter into blind trusts in order to remove or reduce the possibility of conflicts of interest. The net effect of these factors is to reduce the pool of top level executives who are willing to enter public service in the Department of Defense.

An outstanding candidate has been identified for the position of Under Secretary of Defense for Acquisition. The process that will lead to his selection has been initiated. Other executive level appointments are being processed for similar action. In the meantime, the functions and responsibilities assigned to unfilled positions are generally being carried out by deputies or individuals serving in acting capacities. As the full DoD senior management team comes on board, progress on acquisition and other DoD management initiatives currently underway will be expedited.

QUESTION: Mr. Cheney, what do you see as the relative roles and responsibilities of the Deputy Secretary of Defense and the Undersecretary of Defense for Acquisition with respect to: (1) Secretary of Defense, (2) Service Secretaries, and (3) Service Acquisition Executives?

ANSWER: The Deputy Secretary of Defense will serve as a full alter-ego to the Secretary of Defense. He will exercise authority, delegated by the Secretary, on all matters in which the Secretary is authorized to act. He will assist the Secretary in the day-to-day management of the Department. He will also have responsibility, with the Secretary, for ensuring the full implementation of management reform initiatives.

The Under Secretary of Defense for Acquisition (USD(A)) will exercise the authority intended by the Packard Commission and provided in law. Under the direction of the Secretary and Deputy Secretary, the USD(A) will be responsible for policy, administration, oversight and supervision regarding acquisition matters DoD-wide. In this regard, the USD(A)'s authority will extend to directing the Secretaries of the Military Departments on matters for which the USD(A) has responsibility. The USD(A) will have the full confidence and active support of the Secretary and Deputy Secretary as their principal staff assistant on such matters. He will have full access to both officials.

In acquisition matters, the departmental lines of authority and responsibility will flow from the Secretary and the Deputy Secretary to the Under Secretary of Defense for Acquisition (USD(A)). The USD(A) will work with the Secretaries of the Military Departments and Service Acquisition Executives to ensure that the acquisition policies are followed and that the process works efficiently.

QUESTION: What is the status of the President's directed Management Review? Is the role of the Undersecretary of Defense for Acquisition (USDA) covered in this review?

ANSWER: The Defense Management Review, conducted under

National Security Review (NSR) 11, has examined the various efforts made to date to realize the far-reaching improvements envisioned both by the Packard Commission Report and by Congress in the Goldwater-Nichols Defense Reorganization Act of 1986. The completed Report has been forwarded to the White House. It encompasses Department of Defense organization, personnel, acquisition management, and government-industry relationships. The Review was intended not only to identify problems, but more importantly to find potential solutions. The Report addresses the role of the Under Secretary of Defense for Acquisition in considerable detail and identifies specific management initiatives for the President's consideration. Further action on, and release of, the report is pending the President's review.

Acquisition Management

Question. How will your management reforms save the $286 million shown in your budget request and will you need legislation?

Answer. The $286 million included in the FY 1990/FY 1991 Amended DoD budget request reflects further personnel reductions resulting from projected efficiency savings to be derived from management improvements throughout the Department that were to be addressed in the Defense Management Review. That review is now complete, but definitive cost estimates associated with the final recommendations have not yet been made. When these estimates are complete, the details will be provided to the Congress.

ELIMINATION OF AFSC AND AMC

QUESTION: A few years ago, the Navy eliminated it's procurement management organization, the Navy Material Command, because it was an unnecessary bureaucratic layer. Would eliminating the Air Force Systems Command and Army Materiel Command be appropriate methods to streamline and improve the acquisition management of the Air Force and Army?

ANSWER: We are currently in the process of completing the Defense Management Review (DMR). While it is premature to draw conclusions at this point, elimination of management layers and consolidation of related functions where possible is a major theme of our overall effort to improve the efficiency of DoD acquisition management. As part of the DMR, I will be requesting that the Service Secretaries examine their existing management structures and make recommendations for streamlining and consolidation. Identification of specific management organizations as possible candidates for elimination or streamlining is inappropriate at this juncture.

AIRLIFT AND SEALIFT-C-17

QUESTION: Secretary Cheney, if the President's arms control proposal is agreed to it will increase the emphasis on air and sealift requirements. While we are proceeding on the C-17 airlift aircraft virtually nothing is being done to improve our sealift capability.

Given that we are an island nation with multiple overseas treaty commitments, why is the Defense Department content to sit idly by and watch the deterioration of our national sealift capability?

ANSWER: The Department of Defense is vitally concerned about our national sealift capability and is not sitting idly by. Since 1980, the Department has spent over $7 billion to acquire, operate, and maintain sealift capabilities. A dominant characteristic of these sealift improvement programs has been to increase government-owned sealift capacity to offset the declining capacity of the commercial merchant marine. We also recognize that the national security implications of this decline extend beyond force projection capability, to include economic shipping support in wartime as well as our peacetime ability to compete in global markets. In July 1988, we prepared a draft national sealift policy and forwarded it to the National Security Council to serve as a starting point for identifying and coordinating the actions which can and must be taken by agencies and organizations throughout government and in the private sector to retain sealift capabilities in the future. I have expressed my full support for this effort and the Department of Defense will participate fully in the upcoming interagency process.

The degree to which acceptance of the President's arms control proposal will impact airlift and sealift requirements will depend on the scope of the final negotiated agreement, particularly with respect to the question of whether unit equipment for those forces withdrawn from NATO remains in Europe, or is removed and stored outside of Europe. The impact of a negotiated agreement on our NATO reinforcement commitment, as well as resulting changes in warning time assumptions, will also play a role in how we revise strategic lift requirements. With respect to sealift, however, our NATO allies are committed now to providing sealift for NATO reinforcement. That commitment is not expected to change in the future.

QUESTION: Secretary Cheney, several of our military leaders have expressed concern that sealift is one of our most pressing problems. What can the Defense Department realistically do to improve our sealift posture?

ANSWER: The Department of Defense relies on a number of different sources for wartime sealift capability, including: government-owned or chartered ships maintained by both the Navy and the Maritime Administration; ships in the U. S. flag fleet; ships under effective U. S. control which are owned by U. S. citizens but operated under flags of convenience; and ships owned by our allies which are dedicated for our use in their reinforcement. The potential to improve our sealift posture must consider each of these elements. We worked closely with the Maritime Administration in preparing the fiscal year 1990 budget.

Their request for funds to maintain the Ready Reserve Force in a state of readiness and to continue to add ships to the fleet is based on defense requirements. We have also taken steps through the procurement of flatracks and Sea Sheds to improve our ability to utilize commercial container ships for wartime movement of unit equipment. Periodically, we review and update our requirements for allied sealift support based on projected deployment requirements, and ask our allies to change their sealift commitment accordingly. Finally, we have proposed a draft national sealift policy as a starting point for reaching a national level consensus on the government and private sector actions which can contribute most to our sealift posture in the future. I believe that continuing to press for implementation of that policy is the most important near term effort we can undertake.

QUESTION: General Galvin expressed his strong concern for sealift, but when questioned whether he preferred sealift or pre-positioned equipment in Europe (POMCUS), he preferred POMCUS. Would filling our POMCUS units be a realistic alternative to improving sealift?

ANSWER: Filling our POMCUS units would not be a realistic alternative to improving sealift. Apart from forward-based forces, prepositioned materiel in a theater of operations (POMCUS in Europe), is the most rapid means of providing reinforcement forces, with airlift being used for moving troops and that portion of materiel not suitable for prepositioning. The first forces to arrive in theater are critical to executing a successful defense, and their early availability is one of the theater commander's highest priorities. POMCUS requirements are based on our M+10 commitment to our NATO allies. Since sealift cannot deliver forces within that time constraint, materiel must be prepositioned in Europe. Thus, POMCUS is not an alternative to sealift.

Question: What will be the impact of our arms control proposals on pre-positioned equipment? Is it likely it will have to be destroyed?

Answer: We do not yet know which equipment will be selected for reduction. As several of our allies have older equipment than that in POMCUS, it is unlikely that those stocks would be destroyed. It is more likely that we would trade equipment with allies prior to reductions in order to upgrade their forces and destroy only the Alliance's older systems.

QUESTION: Mr. Secretary, considering that airlift will be unable to provide a significant percentage of our European resupply requirements, because of the massive tonnage required, would it not make sense to transfer the funds budgeted for C-17 to improve our sealift capability?

ANSWER: It would not be wise to transfer funds budgeted for the C-17 to improve our sealift capability, particularly for European resupply requirements currently planned to be met with sealift. To clarify the situation regarding airlift and sealift, it is necessary to distinguish between the lift needed for the early deployment of reinforcing forces and the resupply needed to sustain the force once it is deployed to the overseas theater. Airlift provides the only means to rapidly deploy reinforcing forces from the continental United States that are required early in the conflict. Both airlift and sealift can be used to deliver later arriving forces and resupply, with the bulk of routine resupply requirements being met with sealift, and airlift being used only for very urgent needs. Sealift to support resupply delivery is generally considered to be sufficient and, as I indicated earlier, our NATO allies are committed to providing sealift for NATO reinforcement. It is appropriate that we continue to rely upon that commitment.

The current airlift program, of which the C-17 is the most critical element, is based on the need to achieve the goal of 66 million ton miles per day of capability as documented in the Congressionally Mandated Mobility Study. Although strategic airlift capability is sized against the mobility needs of a demanding global war scenario (including NATO), in balance with the other elements of the mobility triad (sealift and prepositioning), it also provides a unique, rapid, and flexible power projection capability for use across the entire spectrum of conflict. Our airlift forces, therefore, serve not only as mobility assets, but as a meaningful deterrent worldwide, and the most potent means available to project forces rapidly to prevent escalation if deterrence in any crisis should fail.

QUESTION: Secretary Cheney, I understand General Cassidy, CINCTRANS, has made some specific proposals regarding sealift. Have you reviewed these proposals and can you tell us your opinion of each one?

ANSWER: General Cassidy recommends an active, collective effort to review the policies, legislation, subsidies, and incentives which influence the way our merchant marine does business, and make the changes necessary to recapture our fair share of the world's shipping trade. I agree that we must examine carefully the entire range of options for meeting our defense sealift needs, and that this review must take place in the context of a national sealift policy. The extent to which we, as a Nation, can improve the merchant marine, and the degree to which those improvements may contribute to an improved defense sealift posture, have yet to be fully evaluated. We both support fully the Department's national sealift policy proposal as the starting point for examining those issues.

General Cassidy proposes that a dedicated fast sealift research and development program be initiated, perhaps by reinvigorating the Maritime Administration's National Shipbuilding Research Program, to evaluate the design, propulsion and commercial feasibility of fast sealift ships. I agree that research and development must be a component of the national effort to rebuild our maritime industries. How the responsibility for conducting that research and development should be shared between government and industry, and to what specific ends it should be directed, have yet to be determined.

General Cassidy recommends that programs already in place, such as the existing Ready Reserve Force, (including the eight fast sealift ships and auxiliary crane ships), afloat prepositioning forces, and programs which improve the military utility of commercial vessels, continue to be supported. I fully agree.

General Cassidy also recommends that mobilization ship designs be maintained through joint Navy and Maritime Administration efforts. Here too, I fully agree.

QUESTION: Can you tell us the cost to DoD by fiscal year for these proposals, assuming they were adopted? Are additional FY 1990 funds required to implement his recommendations?

ANSWER: I cannot provide specific costs to DoD by fiscal year for these proposals because they are dependent on the results of the interagency process we have initiated by proposing a national sealift policy. The required set of policy, legislative, and government and industry investments which will provide the strategic sealift capability to meet national security needs have yet to be fully explored and agreed upon. I desire to see that vital work accomplished without delay and we are working toward that goal. The question of additional FY 1990 funding requirements must be answered in the negative for the same reason. The Department of Defense will participate fully in implementing appropriate governmental actions dictated by the final national sealift policy.

Budget Authority and Outlay Mismatches

Question. Your statement addresses the $3.8 billion accounting difference between CBO and OMB in outlay calculations. You state that it would not be prudent to reduce fast spending accounts to "buy back" the programs that were terminated in your budget request. If the congressional scoring of your budget remains at $3.8 billion in outlays over the summit agreement, how would you propose that this subcommittee meets the outlay target?

Answer. I would hope that your Committee could help persuade CBO to recognize the $2.9 billion savings as a result of advancing the military pay day from Sunday, October 1, 1989 to September 29, 1989. This is standard procedure and not bookkeeping gimmickery. Anything that is done of substance involves either cutting the Defense programs by reducing FY 1990 budget authority (which abrogates the budget agreement) or moving budget authority from fast spending accounts to slow spending accounts (which exacerbates outlay and deficit problems in later years). Both are unwise.

Question. If we must live within the lower outlay ceiling, we must reduce outlays by $3.8 billion. If we don't restore slow spending programs we still need to reduce the budget levels you requested. Would you support a $10 billion budget authority reduction in your budget to meet the outlay ceiling?

Answer. I could not support another $10 billion budget authority reduction. As I have testified before this Committee and the other Defense Oversight Committees, the $10 billion reduction required to meet the Summit Agreement was very painful. An additional $10 billion reduction would entail a great deal of risk to national security.

DRUG INTERDICTION FUNDING

QUESTION: Secretary Cheney, many of my colleagues have expressed interest in the Defense Department's FY 1990 drug interdiction program. The budget does not specifically identify funding or programs -- but we are told that the plan is to fund at least $300 million worth of programs. Can you provide more information of the Department's FY 1990 program? How much funding is for procurement of drug interdiction assets, and which assets do you intend to procure?

ANSWER: The Department is committed to an FY 1990 program of $318 million for drug interdiction including support provided incidental to training. However, the first priority has been the identification and implementation of the FY 1989 program. The Department has recently begun developing the specifics of the FY 1990/FY 1991 program/budget for inclusion in the Amended FY 1991 President's Budget. At this time, the procurement funding requirements have not been identified.

Question: What has the Department done to ensure that Defense drug interdiction programs complement rather than duplicate ongoing efforts of domestic agencies like the Customs Service and Coast Guard?

Answer: On 17 July, 1989, the DoD Drug Coordinator, Secretary Duncan, convened a budget conference under the direction of General Olmstead, DASD(DP&E). Representatives of the Intelligence and Communications Communities, OJCS, CINCS, Services, and Liaison Officers from Law Enforcement Agencies reviewed every funding request forwarded by the various DoD organizations charged with a drug interdiction mission.

The conference's goal was to preclude duplication, ensure interoperability, and measure each submission for Law Enforcement agency support. The final product, scheduled for promulgation in late August by Secretary Duncan, will be the approved DoD Drug Interdiction Budget.

Question: Your proposal is difficult to understand with respect to National Guard drug interdiction activities. Are you proposing that the Army and Air National Guard reduce other activities to accommodate drug interdiction activities within existing funds?

Answer: The Department is committed to providing $318 million from within existing funds to support FY 90 DoD drug interdiction efforts including support provided incidental to training. The identification of the specific funds to meet the FY 90 National Guard requirements is to be accomplished during the upcoming budget review process when the specific funds to meet all Defense drug interdiction requirements will be identified.

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

Reprogramming for Purchase of Aerostats

Question: Last year, congressional hearings documented a radar gap along the Southern border from Texas to northern Florida that is extremely vulnerable to narcotics traffickers entering the U.S. Appearing before the Senate's Permanent Subcommittee on Investigations on June 9, LtGen Stephen Olmstead outlined the Department's plan to request a reprogramming of FY 89 anti-drug funds for the purchase of aerostat surveillance systems to address this gap. What is the status of this request?

Answer: The reprogramming request for procurement dollars for the sensor mix is being prepared by my staff. After my approval, it will be forwarded to Congress.

Deployment of Aerostats

Question: As you know, last year the Customs Service awarded, through a competitive bidding process, the Southwest Regional Aerostat Procurement to address the Southern border radar gap. Given that this procurement was only partially funded, does the Department consider exercising the remaining options on this contract a viable means for the accelerated deployment of aerostats to address this radar gap?

Answer: Yes. The Customs and General Electric contract that is in effect today, provides for optional aerostats which can be procured without further competitive bidding. This situation will no doubt shorten the time required to acquire the additional aerostat for the Gulf of Mexico. The DoD anticipates acquiring three land-based aerostats and one space aerostat under subject contract.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

ARMY AVIATION MODERNIZATION PLAN

QUESTION. In 1988, the Army issued an aviation modernization plan detailing the projected procurement and retirement schedule for Army helicopters. In the interim, a number of factors have rendered these projections obsolete: (1) the proposed termination of the AHIP OH-58D and Apache program; (2) the destruction or severe damaging of several hundred helicopters during a recent windstorm at Ft. Hood, Texas; and (3) the U.S. proposal to include helicopters in the Conventional Armed Forces, Europe (CFE) arms control talks in Vienna. How have these events affected the Army's aviation modernization plans? Could you provide for the record a revised projection of Army helicopter procurement and retirement?

ANSWER. (1) With a total procurement of only 207 OH-58D's, we will be able to meet our Field Artillery Aerial Observer (FAAO) requirements and field OH-58D's to only two forward deployed cavalry regiments. This slows our force modernization and retirement of older aircraft and equips only a small part of our force to see the battlefield at night and during adverse weather. Fewer unarmed OH-58D's mean continued reliance on the older, less capable, day only AH-1's and OH-58A's in the interim. Termination of AH-64's still procures 807 aircraft which supports 40 of the 47 resourceable battalions. Assuming all 40 battalions made it to the fight, this equates to a 15% reduction in armed helicopter tank killing capability, however, five of the original AH-64 battalions do not arrive until after D+60 which makes the real reduction 3%. This is an acceptable near-term risk that will be offset by the fielding of LHX in FY 97. (2) The disaster at Fort Hood did produce some set backs in Army Aviation but, through careful investigation and individual tail number redistribution and control, we are able to recover to a point where the Fort Hood AH-64 Training Brigade will continue AH-64 fielding with minimal delay. However, Army is assessing the feasibility of retiring some of the older AH-1, UH-1 and OH-58A aircraft early in lieu of repairing them. (3) NATO and the Warsaw Pact have not come to agreement on the categorization for helicopters to be used in the CFE negotiations, therefore, Army is unable to assess any impact at this time.

A revised projection of Army helicopter procurement and retirement is being worked. Once the procurement numbers have been locked, the retirement schedule will be finalized.

Tactical Aircraft in Europe

Question: Please discuss the implications of this proposed reduction in conventional arms with respect to types and numbers of aircraft and the basing of our fighter and attack aircraft in Europe. Do you think we should go ahead with plans to move F-16's from Spain to Italy, in light of this proposal?

Answer: While the United States will probably take at least a proportional cut in its European based aircraft, which aircraft and which bases will be reduced has not yet been determined within the Alliance, and won't be until we have finalized and signed an agreement with the Warsaw Pact. We must obviously reassess our aircraft needs based on the conventional threat that will be posed by the remaining Pact forces.

CFE negotiations will not eliminate our requirement for visible evidence of our modern, flexible, immediately available military strength to the Southern Flank of NATO. It is an important commitment to the region, and helps perserve the bond between the Southern Region and the rest of NATO. We would not allow the dual capable F-16 C/D model aircraft to be destroyed under CFE. Potential CFE negotiations may help solve our congested flying problem in the Central Region however, it will not open up a main operating base in the Southern Region. NATO's strength in the flanks becomes more important if CFE thins out the Central Region. In its strike role, the Wing represents a large percentage of the Southern Region's third generation aircraft capability. Cumulative loss of both GLCM and the 401st TFW in its strike role could shift the overall strategic balance in the Southern Region in favor of the Warsaw Pact. A reversal in the US position to support funding the 401st TFW relocation to Crotone would seriously affect our ability to support flexible response in the Southern Region, complicate NATO's nuclear modernization process and drive at least an interim wedge into our relations with Italy.

MANPOWER AND PERSONNEL--DOPMA

Question: In 1980, the Defense Officer Personnel Management Act (DOPMA) was enacted. DOPMA was the first comprehensive revision of statutes affecting the appointment, promotion, tenure, and separation of active duty commissioned officers of the armed forces since 1947. It was enacted, however, at a time when officer retention rates were much lower than at present, and when the possibility of substantial reductions in the active force were not considered likely in the foreseeable future. Do you think that the basic structure DOPMA creates for managing the careers of our active duty officers is still valid in an era of high retention, lengthening times between promotions, and the possibility of major reductions in force size and hence the officer corps? If you think changes are in order, what changes would you recommend?

Answer: DOPMA created the legislative framework for an effective and efficient officer personnel management system which has been responsive to the ever-changing force structure profiles. Further, DOPMA was intended to strike the necessary balance between the needs of the Services and the need to offer reasonable career expectations for the active duty officer corps. To this end, DOPMA has served the Department well since its enactment, and a need for major overhaul is not envisioned.

Based on the lessons learned from the recent officer reductions, however, the current DOPMA provisions are not adequate to shape the force prudently, especially in the senior officer grades, when large reductions are directed. This is particularly true when the reductions are levied without enough lead time to adjust personnel management plans accordingly. To alleviate this problem in the future, the Department has proposed legislation that would give Secretaries of the Military Departments additional authorities to increase options for voluntary and involuntary retirement and separation of officers when reductions of 1 percent or more are directed.

Aside from the officer management problems caused by a rapid reduction in force levels, the limitations imposed by the DOPMA field grade ceilings are beginning to cause the problems anticipated by the authors of DOPMA. In the House Report (HR 96-1462) accompanying the 1980 DOPMA legislation, the committee indicated that the then new grade tables were largely based on current retention rates, that were recognized to be lower than required to achieve the existing grade requirements in the mid-to long-term. To enable continued operation within the DOPMA management parameters (promotion opportunity and timing), the committee acknowledged that the grade tables may need to be revised in the face of improving retention and more definitive grade requirement determinations.

Since DOPMA was enacted, retention has improved over the low retention of the late '70s and officer requirements have not changed substantially. As a result, promotion opportunity has been lowered, the time between promotions lengthened, and more stringent loss management policies instituted to stay within the DOPMA field grade ceilings. In some cases, promotion opportunity and timing are already outside the DOPMA objectives and highly qualified junior and senior officers are being forced to separate, or retire, short of their career expectations.

To address this issue, a contractor validation of field grade requirements, starting with Service O-6 paygrade positions, is planned. Based on the results of this in-depth validation, the Department may request changes to the DOPMA grade tables.

In the meantime, the Department will continue tight control on promotion plans and stringent loss management actions to achieve the required force profiles.

Major Cultural Change in Defense Acquisition

QUESTION: The Packard Commission report stressed the importance of achieving a major cultural change in the way the Department of Defense goes about buying its weapons. The Reagan Administration supported the findings of the Packard Commission and moved quickly to appoint an Under Secretary of Defense for Acquisition. The new "czar" was to be the cornerstone of a stronger and more streamlined system. Many people feel disappointed with the results, thus far. There has been a succession of three Under Secretaries of Defense in as many years. At this time, six months into the new Administration, we are still awaiting the Bush Administration's first appointment to the key post. Could you bring us up to date on your plans not only for filling this position, but, also, for achieving a more efficient and effective acquisition process?

ANSWER: You have touched on the difficulty in recruiting high-level private sector executives for the position of Under Secretary of Defense for Acquisition (USD(A)). As you know, the statute creating the position calls for someone with an extensive management background in the private sector. Realistically speaking, most individuals qualified for the USD(A) position instantly understand at the very least, their salary would be substantially less than what they are presently making. I think you will agree this is a disincentive to accept an offer to become the USD(A).

I think you will also agree that we need to set very high standards from which to evaluate potential candidates. These standards can narrow considerably the list of candidates and can lead to delays in filling the USD(A) should candidates not accept the offer or are for one reason or another unqualified.

I do believe however, that there are eminently qualified individuals who are motivated by the challenges the position offers. We are putting our best effort forward to select the best individual for the Department of Defense and an individual who will work closely with the Congress on acquisition matters.

Considerable progress has been made to improve acquisition policies and practices in the Department of Defense. Emphasis has been placed on maintaining greater stability and savings through purchasing at economic production rates, using multiyear contracting for procurement programs, baselining major weapons programs to facilitate management oversight, and two-year budgeting. Specific actions in these areas include the following:

- Economic production rates contribute to stability and savings by allowing a contractor to take advantage of tooling and plant capacity to produce additional units of a system at a cheaper unit cost. Of 34 major defense acquisition programs in the DoD FY 1989 amended budget submission, 30 were planned for procurement at or above the minimum economic production rate.
- Multiyear contracts for production of defense systems allow contractors to plan and invest with more confidence and enable them to buy more economic order quantities of many components of the system. Total savings from multiyear procurements since FY 1982 will exceed $7.5 billion. In the FY 1989 DoD budget, seven multiyear candidates were approved by Congress with an estimated total savings of $942 million.
- The acquisition baseline is a formal agreement between the OSD and Service leadership to manage the program based on specific performance, schedule, and cost objectives. Deviations from these objectives trigger a review to either restore the program to the baseline parameters, revise the baseline agreement, or cancel the program. The policy has been improved to closely link the establishment of the program baseline with major milestone reviews. The Under Secretary of Defense for Acquisition now approves the baselines giving high priority to the efficient implementation of this policy.
- DoD submitted its first two-year (FY 1988/FY 1989) budget in January 1987. The two-year budget was a serious effort to promote stability and consistency in defense budgeting. Regrettably, Congress did not act on the two-year budget. The contribution of the two-year budget to program stability will depend largely on the cooperation of Congress. DoD will continue the two-year cycle of planning, programming, and budgeting defense requirements.

Midgetman and Deterrence

Question: In comparing the survivability of rail garrison MX and Midgetman, Midgetman's advantage is that it can survive with only a few minutes' warning that an attack is underway, while rail garrison MX must disperse hours before an attack begins if it is to survive. In a major crisis, the United States would presumably order rail garrison MX to disperse as one of many actions to increase force readiness. Clearly, the Air Force believes that the United States would obtain the needed warning and act on it in any other situation as well. But even if the United States fails to obtain or act on the needed warning, how vital is Midgetman for maintaining deterrence? The contingency Midgetman ensures against, a surprise attack, is highly unlikely. Moreover, the United States has spent many tens of billions of dollars on its bomber and submarine forces, which insure against precisely this contingency. Why do we need to spend $30 billion on Midgetman to ensure against an unlikely threat for which we already have so much insurance? What would be the risk to the United States of not having Midgetman?

Answer: In the interest of ensuring deterrence, the United States deploys diversified strategic retaliatory forces to hedge against a disarming first strike, to complicate Soviet attack plans, and to guard against technologicial surprise. To this end, the United States maintains a variety of basing modes, launch platforms, and attack vehicles. Deploying the Small ICBM makes U.S. strategic forces more robust and viable under all conditions --including a preemptive, surprise attack executed without strategic warning. Although such an attack is considered unlikely today, it may become more plausible in the future if the Soviets develop capabilities that threaten a large portion of the U.S. strategic nuclear deterrent.

Deploying the Small ICBM system offers more than a hedge against a surprise attack that could threaten the other ICBM systems as well as nonalert strategic bombers and submarines in port. The Small ICBM provides greater targeting flexibility and efficiency than highly MIRVed systems. It is preferred over highly MIRVed systems for striking isolated targets and for attacking newly emergent targets that require retargeting. Having the Small ICBM in our arsenal will also allow the MIRVed systems to be planned more efficiently.

Finally, the Small ICBM promotes strategic stability. The single warhead system, or even the two-warhead version--if decided upon, is an unattractive target for preemptive attack because of the highly unfavorable exchange ratio to the attacker. Deployment of the Small ICBM is, therefore, in concert with our arms control objectives of increased nuclear security and stability. Its importance to our strategic posture increases even more if we reduce our nuclear forces below the levels contemplated in START. Should that occur sometime in the future, the smaller U.S. force that is retained must be survivable under worst-case conditions.

The ICBM Modernization Program is intended to provide mobile ICBM forces that are achievable within our resource constraints and that will provide a hedge against potential as well as existing threats. Peacekeeper Rail Garrison offers a relatively low-cost, near-term option for improving the survivability of our ICBM force. The Small ICBM, which complements Peacekeeper Rail Garrison by carrying only one or two warheads and by being independent of strategic warning, has been made affordable by delaying its development and procurement. Peacekeeper Rail Garrison and Small ICBM will be deployed sequentially, rather than simultaneously, under this plan--maintaining a relatively level ICBM budget.

Navy/Marine Corps Share of Department of Defense Budget

Question: Several military analysts are now arguing that, as the threat of war with the Soviets recedes, as overseas base access and overflight rights are further restricted, and as Third World military capabilities increase, a greater share of the Department of Defense (DoD) budget should be allocated to our sea-based forces--the Navy and the Marine Corps--because these forces can project power overseas with the least reliance on overseas bases and overflight rights, and because these are the forces most used by the United States in crisis-response operations in the Third World. I am interested in your reaction to this argument. Do you agree that if the world evolves in this direction, a greater share of the DoD budget should be allocated to the Navy and the Marine Corps?

Answer: The Soviet Union is still the major threat to the West. Even though some progress has been made in East-West relationships it is still too early to relax our efforts. It should also be noted that DoD resource decisions are based on assessments of potential and likely contingencies. Budget share is then a result of those decisions, not a factor to be manipulated.

Strategic Bombers

Question: Could you please explain the rather dramatic rises in the B-2's cost estimates, and predict when we can expect (1) a firm dollar figure and (2) a relatively firm development/production/deployment schedule?

Answer: Four different B-2 cost estimates have been presented in Presidents' Budgets. They, in billions of base year 1981 dollars, are:

	FY 1986	32.3B
	FY 1988	36.6B
	FY 1990	42.5B
Amended	FY 1990	43.8B

The FY86 estimate was developed parametrically in 1981. It was based on early engineering designs and program schedules that have since changed. Three important revisions have been made to this estimate.

[Deleted].

Strategic Defense Initiative

Question: The Joint Chiefs of Staff have outlined requirements for the Phase I Strategic Defense System that could destroy a proportion of the warheads in the early waves of a Soviet attack. Many believe that the primary targets in the initial waves of a Soviet attack would be the U.S. intercontinental ballistic missiles (ICBMs) in their silos. Yet, the Bush Administration has outlined a modernization plan for these missiles that would greatly reduce the number of ICBMs deployed in fixed silos: it would move the 50 silo-based MX missiles onto railroad trains and it would continue the development of a small, single warhead, road-mobile ICBM. This program would eliminate many of the targets that the Soviet Union might try to destroy in the early waves of a ballistic missile attack. Does the Administration's ICBM modernization plan weaken the rationale for the Phase I Strategic Defense System? If the defense budget cannot support development of both the Phase I Strategic Defense System and the small ICBM, both of which would reach their peak funding years in the mid-1990s, which program would you assign a higher priority? Would you recommend an added delay in one or the other program or would you suggest that one be cancelled?

Answer: Deployment of mobile missiles or arms control might reduce the number of ICBMs in silos but would not weaken the rationale for the Phase I Strategic Defense System (SDS) because the SDS has a broader mission than the protection of silos. The improvement in survivability for all classes of targets, the increase in Soviet uncertainty that an attack on the United States could achieve their wartime objectives, and the protection provided against an accidental or third country attack would be the most important benefits of a Phase I system.

The ICBM modernization and SDI programs are at different stages of their technical development and serve different purposes, but both have sufficient priority to be funded within current budget resources. Therefore, they should not be traded off against each other. While the technical feasibility of the Small ICBM is assured, the SDI program is structured to provide, in the early 1990s, the basis for deciding the technical feasibility and cost of strategic defenses. An informed decision could then be made regarding deployment of strategic defenses.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

B-2 Concurrency

QUESTION: Mr. Secretary, for $30 billion the American taxpayer bought the B1-B that reportedly will only be capable of penetrating Soviet air defenses for about five years--once it is operational. One of the major flaws in the B1-B program was the decision to procure planes while research and testing was still going on. The Air Force said it learned from the B-1 experience not to develop and produce complex systems concurrently. But there are reports that nearly half of the B-2s will be delivered before all testing is complete. Are we walking down the same path with the B-2 as with B1-B--with the same probable results?

ANSWER: A lot of things have been done differently in the B-2 program. First of all, we have not had the high degree of concurrency that plagued the B-1B. Second, we learned that it isn't the best idea to place the service as the weapon system integrator -- they aren't staffed to handle that job. In the B-2 we have a prime contractor who is responsible to deliver a complete weapon system. The B-2 program is based on demonstrated milestones rather than being calendar driven. In addition to an aggressive "Lessons Learned" program with the B-1B Program Office, the B-2 program is being managed in accordance with an approved System Maturity Matrix which has been delivered to the Congress. Finally, based on initiatives from OSD and from the

Congress, we're making it known that quality is a primary consideration.

A careful review of the current test and procurement schedules of the B-2 reveals that the program, for the next couple of years, is already at a minimum sustaining production rate. Early in the B-2 program, provisions were made in full-scale development and production planning to lessen the effects of concurrency and the effects of flight test uncovered deficiencies. A robust risk reduction program satisfactorily resolved the technical problems with major future cost potential.

There is no doubt that we, and you, expect this airplane to be fully capable of accomplishing its assigned mission the day it's declared operationally capable. A lot of high-powered management and engineering talent in government and industry is dedicated to making that happen.

Bomber Affordability

QUESTION: Mr. Secretary, the Air Force has bought 100 B1-B bombers at a cost that will rise to $30 billion by the end of FY1994. The B-2 is now estimated to cost over $70 billion, and its costs are sure to soar even higher. Over the past two years alone its cost has jumped $17 billion. How can we possibly afford over $100 billion for some 230 bombers?

ANSER. The B-2 Advanced Technology Bomber is the centerpiece of a long established plan for modernizing the bomber leg of our triad of strategic forces. That plan acknowledged the continuing requirement for an effective bomber force, the growing vulnerability of penetrating bombers to Soviet defenses, as well as the necessity to replace the aging force of B-52 and FB-111 bombers. The revolutionary impact of low observables technology on bombers' capability was sufficiently apparent in the late 1970s to make the Advanced Technology Bomber the choice for bomber modernization. Bipartisan support for this approach has been strong and consistent. The production of 100 B-1B bombers was authorized as an interim fix until the B-2 could be fielded, which caused no deviation of the Air Force, the Office of the Secretary of Defense, the White House, or Congress from their strong commitment to the ATB/B-2 program since the early 1980s.

We are poised to reap the benefits of 10 years of investment in a revolutionary technology. More than $20 billion has been spent to enable the U.S. to deploy a system that is not only strategically stabilizing, but which will modernize our bomber forces for many years into the future. Regardless of what has been said by skeptics and critics, starting from today, there is no effective alternative system which could be procured more cheaply than the B-2 bomber.

QUESTIONS SUBMITTED BY SENATOR FRANK R. LAUTENBERG

Transfer of Foreign Civilian Technology

Question. Mr. Secretary, Welcome. I'd like to talk with you today about the issue of U.S. military dependence on foreign civilian technology. A recent report by the Office of Technology Assessment entitled "Holding the Edge: Maintaining the Defense Technology Base," concluded that: an increasing number of domestic high technology industries, important to the military are losing technology leadership and market share to foreign civilian competition. U.S. military dependence on foreign civilian technology and products is increasing. Foreign content in U.S. weapons systems is significant and growing. The report says that significant loss of capacity by U.S. companies in these dual use industries could undermine our basic military strategy of countering superior numbers of enemy troops and equipment with superior technology. Failure to address these problems will leave the U.S. military vulnerable to the self-interested actions of other nations on whose technology the U.S. may depend. Mr. Secretary, do you believe this is a serious problem, and if so, what is the Defense Department doing to reverse these trends.

Answer. The incorporation of foreign manufactured components and materials into weapon systems and defense equipment is a result of a phenomenon affecting both defense and non-defense production. This is the phenomenon of the globalization of production where domestic manufacturers seek out suppliers based on a number of factors other than location (e.g., cost, quality, delivery time). When all factors are considered, a domestic manufacturer may determine that an offshore supplier provides the greatest benefits.

The globalization of production has had a profound affect on American manufacturing. As other countries improve their productive capabilities, American dominance in industries can no longer be taken for granted. The effect of this competition can lead to foreign sourcing of components and materials used in defense equipment. But it is important to remember that foreign sourcing does not, in and of itself, mean foreign dependency or vulnerability.

One way the DoD is addressing the competitiveness issue is to support the consortia concept which allows companies to pool resources on research that leads to technologically advanced products. The DoD helped establish SEMATECH, a research consortium, that is exploring new semiconductor manufacturing technologies and we are helping to establish a consortium for the optics industry as well. Augmenting the consortia concept is research into promising technologies like High Definition Television. Also, when speaking of consortia, it is important to keep in mind that many U.S. companies are multinational and obtain parts, etc. from their own overseas/foreign subsidiaries.

Procurement restrictions offer another way to assist threatened industries critical to defense production. For example, when unfair trading practices caused the bearing industry to lose significant market share, the DoD imposed a procurement restriction requiring bearings to be purchased from domestic manufacturers in most cases.

The DoD is using authorities under the Defense Production Act as another way to reduce foreign dependencies. Using this Act, a domestic manufacturing capability for quartz fiber is being created. Quartz fiber is used in a variety of aerospace applications and we are currently totally dependent on a foreign source for this critical material.

Planning to ensure that foreign dependencies are not built into weapon systems must be done early in the acquisition process. As required by provisions in the Fiscal Year 89 Defense Authorization Act, we are developing procedures that will allow industrial base concerns to be addressed during the early phases of weapon system acquisition.

Although we have a number of programs and initiatives to assist American industry, we must realize that the nature of the world trading environment is a crucial element in the competitiveness equation. By encouraging free and fair trade at home and abroad, we foster the kind of competitive environment and foreign market access that is most conducive to developing and maintaining strong domestic industries in support of our defense production requirements.

We must also realize that the need to maintain a competitive domestic industrial base cannot be viewed in a vacuum. Our allies can contribute to our mutual defense efforts and the U.S. needs to be receptive to technological advances made in other countries. Indeed, by incorporating the best technologies that the alliance has to offer, we advance the alliance's basic military strategy using superior equipment and technology to counter superior numbers of enemy troops. To augment U.S. research and development efforts by taking advantage of offshore technology, the DoD has a system called project SOCRATES. Project SOCRATES will allow scientists and researchers access to the current status of worldwide technological capabilities, forecasts of future worldwide technological capabilities, and interrelationships among technologies.

A companion study on foreign availability has also been instituted under the Deputy Under Secretary of Defense (Industrial and International Programs) Critical Technologies Program. Using the resources of the Institute for Defense Analysis, all technologies listed in the Militarily Critical Technologies List are currently undergoing a foreign technology assessment to determine both foreign availability and foreign capability.

Foreign sourcing of components and materials needed for defense production is a major concern; however, measures to reduce these dependencies must be taken judiciously so we do not deny ourselves access to technology developed overseas or unnecessarily provoke counterproductive reactions from our allies.

Foreign Dependency

Question. Mr. Secretary, I am also increasingly concerned about U.S. dependence on our allies, particularly Japan, for electronics components for major weapon systems. Is this a serious problem in your view?

Answer. The Department has been aware for some time of increasing incidences of foreign sourcing for a variety of parts and components used in the manufacture of weapon systems, to include electronic components from Japan and the Far East. Unfortunately, much of our knowledge is anecdotal and is based on in depth study of only a few weapon systems. A comprehensive set of data detailing the true nature and scope of foreign sourcing of electronic and other types of parts and components does not exist.

The situation is further complicated by the fact that not all foreign sourcing constitutes a dependency, that is, a lack of a domestic source of supply. For example, notwithstanding the use of a foreign part in the manufacture of a specific weapon system, for reasons of cost, quality, delivery availability, etc., sources might exist in the U.S. or Canada that would be readily available as an alternative source of supply. In the same vein, not all dependencies necessarily constitute a vulnerability. A vulnerability might be characterized as a potential situation of lost production or capability for critical weapon systems due to lost access to foreign sources or due to a lack of a U.S. or Canadian substitute. The question of vulnerability is the real issue that we must understand better and develop ways to address.

To help us understand just how serious the problem is, the Defense Advanced Research Projects Agency (DARPA) has recently undertaken a study of the dependency of DoD on foreign technology and production. What will set this effort apart from earlier studies will be the attempt to develop a far better statistical data characterization of the extent and nature of the foreign sourcing problem. Given the insights of data, DARPA also intends to undertake an assessment of the difficult issue of vulnerability. From this overall effort, we hope to understand what policies and actions DoD might pursue to reduce or mitigate potential national security vulnerabilities associated with foreign sourcing.

Question: Can you see a time in the future when, in a U.S. effort to regain a share of the world electronics market, that Japan could use this against us by cutting off our supply of needed military electronic equipment?

Answer: It is difficult to conceive of a set of circumstances whereby Japan, in the context of economic competition, would cut off our supply of electronics or other components critical to the production of military equipment. It would simply not be in their national security interests to do so.

QUESTION. Given recent Japanese advances, and the fact that gallium arsenide has been deemed a critical technology by your department, do you believe our effort and level of spending on this technology is adequate? If not, what level of funding do you believe is adequate?

ANSWER: Digital gallium arsenide microelectronics technology has no funds in the FY 1990 budget which is clearly inadequate. DARPA's program would require $59 million in FY 1990 to continue efforts in upgrade demonstrations, manufacturing, and advanced components. If funded, this comprehensive program will initiate the use of digital gallium arsenide technology to add capability to fielded military systems, and will simultaneously build the U.S. manufacturing base for advanced digital gallium arsenide technology.

QUESTION. If not, what level of funding do you believe is adequate?

ANSWER. $50M/yr. will provide one mainline effort in each technical area. The lack of backup, or parallel approaches, while not optimum, represents a reasonable tradeoff among limited resources for manufacturing technology development for microelectronics. Led by OSTP, DOD is working with other agencies to identify additional resources which can be applied to the X-ray lithography program.

QUESTION. Mr. Secretary, I understand that Japan is spending between 1/2 to $1 billion a year to look at 5 different x-ray Lithography Techniques. What is DoD doing in this area, and is our effort adequate?

ANSWER. DoD has defined and initiated a program to develop a domestic industrial base for X-Ray lithography to be used in fabrication of advanced microelectronics in the mid-1990's. This program addresses long-lead developments in equipments, materials and processing and includes final demonstration in integrated circuit fabrication. DOD has used the $35M combined funding in FY88-FY89 to begin efforts with a strong team of industrial contractors, two national laboratories and three universities. Enhanced support for the program is required to fund the minimum essential effort in each technical area. Close coordination with IBM, the only U.S. industrial firm with a sizeable X-ray program, and SEMATECH will optimize the return on investment.

TRAINING OF ACQUISITION PERSONNEL

Question: Mr. Secretary, a GAO report on commercial product acquisition identified lack of training of acquisition personnel as one problem preventing the Defense Department from procuring as many commercial products of nondevelopment items as possible. The GAO recommended that the Secretary of Defense act to assure that sufficient training is provided so that commercial products and other nondevelopment items are procured to the maximum extent practicable. It recommended that as a first step for accomplishing this, DoD should assess its current NDI related training efforts. What has DoD done to implement this recommendation? In your view, are additional resources needed to accomplish the addititional training: If so, what is your estimate of the amount of money that is necessary?

Answer: DoD's assessment of the NDI related training currently being provided is that it is not sufficient to accomplish our goal of increasing our use of nondevelopmental items. This training need has been identified to the DoD Curriculum Advisory Council. Additionally, our overall program plan for nondevelopmental items includes improving the awareness and the understanding of NDI policy and use by all of our personnel involved in acquisition. The preparation of a video tape on the use of nondevelopmental items and field visits by the NDI program staff are two means we are considering to achieve this end.

At this point it appears that the necessary augmentation in training and awareness can be accomplished with existing budgeted resources. If further analysis indicates a need for additional resources, funds will be requested.

QUESTIONS SUBMITTED BY SENATOR ARLEN SPECTER

V-22 OSPREY

Question: General Lindsay, Special Operations Forces Commander, has testified that the V-22 is critical to accomplishing his mission, particularly the long range insertion/extraction and hostage rescue. How will these missions be accomplished satisfactorily without the V-22?

Answer: The primary contribution of the Special Operations Forces (SOF) variant of the Osprey, the CV-22A, would be to provide long-range extraction capability for SOF. Other SOF missions can be accomplished using existing aircraft. Existing SOF helicopters also could perform many of the extraction missions envisioned for the CV-22A by using aerial refueling to extend their range, by altering concepts of employment and, in some cases, by accepting increased risk. There are a limited number of missions that could not be accomplished using alternative systems and procedures. These, however, are generally higher-risk missions that we are less likely to attempt. The CV-22A is too costly to develop and field just for these missions, because it would require developing and fielding the baseline V-22 program first.

Question: The OSD proposed alternative to the V-22 will require a much greater number of pilots than would a V-22 fleet. How much more will it cost to recruit and train these extra pilots, and how will the Department of the Navy be able to retrain the pilots, particularly in light of the projected pilot retention crisis?

Answer: The DoD proposal will require relatively few more pilots than the V-22 force would, and no increase until after FY 2000. We fully expect that our planned recruitment and training infrastructure will have the capacity to service these extra pilots after the turn of the century.

F-14D Tomcat

Question: Mr. Secretary, you have proposed terminating the F-14 new production program and relying totally on the remanufacturing of other F-14s. What is the unit cost to remanufacture an F-14 under your amended budget and how does that compare with your original plans? Please specify, Mr.

Secretary, how many F-14s you anticipate remanufacturing in FY 91 through 94. Considering the projected 50% service lives of remanufacturing F-14Ds versus new-production F-14Ds, do you think it is as cost effective to remanufacture existing new F-14Ds into D versions as it would be to procure new F-14Ds, considering the relative service lives of remanufactured versus new aircraft?

Answer: There is currently a surplus of F-14 aircraft in the Navy inventory. The surplus is projected to last until the mid-1990s. Acquisition of costlier new-production F-14s is unattractive because the aircraft would have a service life extending well beyond their usefulness in the future warfare environment. Remanufactured F-14As will have a service life long enough to maintain our capability while we make the transition to new-technology aircraft. Remanufacturing is the quickest and lowest-cost approach to modernization. During the five-year period FY 1990-94, an aggressive remanufacturing program will modernize nearly the entire fleet while saving over half the cost per aircraft. Our original plan would have procured 60 F-14s at a unit cost of $101 million in then-year dollars. Under the amended budget proposal, we will remanufacture 150 aircraft at a unit cost of $51 million in then-year dollars: 6 in FY 1990, 12 in FY 1991, 24 in FY 1992, 48 in FY 1993, and 60 in FY 1994. In then-year dollars, the cost for new aircraft per year of life (25 years) is $4.0 million. For remanufactured aircraft, whose life expectancy is 14 years, the comparable cost is $3.6 million.

IMPROVED RECOVERY VEHICLE

QUESTION. Mr. Secretary, since you have chosen to cancel the IRV program, what steps have you taken to insure that M1A1 tanks weighing 68 tons can be recovered safely?

ANSWER. In December 1987 the Army published a change to the M88A1 operations manual which required use of a drag or anchor tank during M88A1 recovery operations of M1/M1A1 tanks even when using a tow bar. The use of the drag vehicle (tank) will help prevent the heavier M1/M1A1 from pushing the M88A1 to the side or jackknifing when stopping. This requirement and other safety procedures required during recovery operations have been periodically published and sent to the field (TACOM Safety of Use Messages, Dec 83 and May 86; PS Magazine, Mar 84 and Nov 86; and interim change to M88A1 operations manual, Oct 86).

After the decision was made to cancel the IRV, MG Tait, then Commandant of the Armor School, sent a message to the field to remind Armor leaders to insure the use of the procedures outlined in operator manuals when towing M1 and M1A1's with other M1's and M88A1 recovery vehicles. An article on M88A1 towing safety recently appeared in the Army's safety publication Countermeasures (No. 4-89, July 89) and a similar article will soon be published in PS Magazine.

It is felt that these measures sufficiently address the current problem. Prescribed recovery procedures appear to have limited towing accidents over the past few years despite the towed vehicle weight increasing from the 52 ton M60 series tank to the 65 ton M1A1.

QUESTION. How many deaths and injuries can be attributed to recovering M1s and M1A1s using the aforementioned recovery system?

ANSWER. A review of Army Safety Center records for the period FY 80 through FY 89, indicates only six M88/M88A1 accidents were reported while towing M1, and M1A1 tanks. Of these six accidents, only one occurred when the required brake vehicle (drag tank) was used. There were no fatalities in those accidents and a total of five soldiers were injured. However, because the Army will not begin to field its 68 ton version of the M1A1 tank until April 1990, and the 69.3 ton M1A2 tank in FY 93, we have no historical data available from which to judge the adequacy of the M88A1 recovery capability at these increased weights.

SUBCOMMITTEE RECESS

Senator INOUYE. Well, with those good words, it is my great pleasure to adjourn the hearings.

[Whereupon, at 4:02 p.m., Thursday, June 22, the subcommittee was recessed, to reconvene at the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

THURSDAY, MAY 4, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:05 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Bumpers, Stevens, D'Amato, Rudman, Cochran, and Specter.

DEPARTMENT OF DEFENSE

DEPUTY SECRETARY OF DEFENSE

STATEMENT OF HON. DONALD J. ATWOOD, DEPUTY SECRETARY OF DEFENSE

OPENING STATEMENT

Senator INOUYE. This morning the Subcommittee on Defense Appropriations welcomes the new Deputy Secretary of Defense, Donald Atwood. Mr. Atwood is making his first appearance before the Congress as Deputy Secretary of Defense, and this morning he will testify on President Bush's amended fiscal year 1990 defense budget.

The amended budget requests $305.5 billion in budget authority for national defense, of which $295.6 billion is for the Department of Defense. The new budget represents a reduction of $10 billion in budget authority from the request submitted by former President Reagan. This amount provides for growth in defense spending sufficient to offset all but 1 percent of inflation.

The budget proposes several force structure cuts, including the reduction of 17,000 military end strength and the retirement of an aircraft carrier. Several programs are proposed for cancellation, such as the V-22, the F-14D carrier aircraft, and the Army helicopter improvement program. The AH-64 Apache helicopter and the F-15E aircraft are proposed for termination after fiscal year 1991.

Many programs are rescheduled or cut back. Among these are the B-2 bomber, the SDI, the Navy's T-45 trainer, UH-60, and SH-60F helicopters, the F/A-18 fighters and the coastal minehunter ships.

We are pleased to note that the Department largely protected personnel and readiness programs and the 3.6 percent military pay raise. However, we continue to remain concerned that some personnel programs, such as medical care, remain underfunded.

Secretary Atwood, the Department's budget staff has done an impressive job in revising the defense budget in 2 short months, so I would have to say you are inheriting a first-rate staff.

I must tell you that we are concerned, however, that while your budget contains many painful program decisions it falls short of the deficit reduction goals stipulated in the recent bipartisan budget agreement. The Congressional Budget Office maintains that the outlays, the spending in fiscal year 1990, that accompany your $305.5 billion appropriation request is not the $299.2 billion settled upon in the budget agreement.

Rather, CBO informs us that it scores the national security request an outlays of $303 billion, or $3.8 billion above the budget agreement. As you know, this Committee must comply with the CBO's accounting of outlays. Accordingly, were we to follow the Department's allocation of program cuts between appropriations cuts, we would have to cut another $10 billion to bring the defense budget within the ceiling set in the budget agreement.

Mr. Secretary, on behalf of all subcommittee members I would like to congratulate you on your new appointment and I can assure you that we look forward to working closely with you this year as well as in future years.

We have received your full statement. It will be made part of the official record, and you may proceed as you wish, sir.

Mr. Atwood. Thank you very much.

This, as you said, is the first appearance I have made since my confirmation as Deputy Secretary, and I am very pleased to appear before you. I, too, look forward to working with all of you this year and in the years to come.

I do have a short slide presentation which I feel will probably set the stage for future discussions and if you are willing, we might take just a few moments and go through that.

Senator Inouye. Fine, sir. Without objection all of the charts will be made part of the record at the appropriate places.

Mr. Atwood. The decisions that were made to adjust the fiscal years 1990 and 1991 DOD budget and to develop the management improvements which we will propose shortly were guided by our determination to achieve the necessary and affordable defense resources, both now and in the future.

Today I am going to focus primarily on the budgetary decisions that we have made in amending the 1990 and 1991 defense budget and provide some thoughts on improving the management of our defense resources.

Before discussing specific adjustments and the effect they will have on the structure and on the capability of our forces, I think it is important to discuss briefly how we viewed the changes occurring in the Soviet Union when we determined the necessary level of defense spending.

Some may argue, and do, that we can reduce our defense resource level because of the reduction in the threat to our security brought about by the changes taking place in the Soviet Union. We sincerely hope that Mr. Gorbachev's efforts represent a fundamental and a lasting shift in Soviet policy, and we sincerely hope they are successful and contribute to a lessening of tensions worldwide.

However, we cannot afford to react unilaterally to political rhetoric. Despite Mr. Gorbachev's pronounced commitment to a defense military doctrine, the Soviet Union continues to improve its forces, which are the largest in the world and which outnumber those in NATO in almost every category of conventional forces.

It would not be in our best interest or in our allied security to respond to Soviet reductions with unilateral cuts of our own that would result in preserving their conventional superiority. Peace through strength remains the best deterrent to aggression and it has proven to be key to the successful arms reductions negotiations.

These points are being considered during our ongoing defense strategy review, which I am sure you are aware of. This was directed by the President, is currently under way, and will be completed shortly.

FISCAL YEAR 1990/FISCAL YEAR 1991 DOD BUDGET

[Billions of dollars]

	1989	1990	1991	1992	1993	1994	Cumulative, 1990-94
Budget authority:							
January budget	290.2	305.6	320.9	335.7	350.7	365.6	1,678.5
Delta		−10.0	−9.9	−13.7	−14.8	−15.8	−64.2
Amended budget	290.2	295.6	311.0	322.0	335.9	349.8	1,614.3
Outlays:							
January budget	289.8	293.8	304.7	316.2	329.3	343.4	1,587.4
Delta		−4.0	−6.9	−9.4	−11.9	−13.9	−46.1
Amended budget	289.8	289.8	297.9	306.8	317.4	329.5	1,541.3

Mr. ATWOOD. The amended 1990/1991 DOD budget represents a reduction in budget authority of $10 billion in 1990 and $9.9 billion in 1991. Our outyear program includes 1 percent real growth in fiscal year 1992 and 2 percent in 1993.

The bipartisan agreement with Congress reduced the 1990 defense budget by an additional $3.7 billion. These reductions total $64 billion for the 1990 to 1994 period and are in addition to the $313 billion cut out of the 1988 to 1994 program since January, 1987.

As a result of these adjustments, the budget now before Congress requests budget authority of $295.6 billion in fiscal year 1990 and $311 billion in 1991. Real growth declines by 1.2 percent in 1990. This marks the fifth consecutive year of negative real growth in defense budgets. The real growth of 2.3 percent in 1991 over 1990 will not make up for the lower 1990 program, since the 1991 program has not been changed from that in the President's February 9 plan.

The magnitude of these reductions and the trend in declining growth underscore the difficult and complex task in adjusting our defense program to accommodate these latest reductions.

FISCAL YEAR 1990/FISCAL YEAR 1991 AMENDED BUDGET—BUDGET AUTHORITY BY TITLE

[Billions of dollars]

	Fiscal year 1990			Fiscal year 1991		
	January budget	Adjustment	Revised request	January budget	Adjustment	Revised budget
Military personnel	79.8	−0.7	79.2	82.1	−0.8	81.3
O&M	91.7	−1.5	90.2	95.5	−1.5	94.0
Procurement	84.1	−5.4	78.8	91.9	−4.7	87.1
RDT&E	41.0	−1.5	39.5	41.3	−1.8	39.5
Military construction	5.3	−0.5	4.8	5.9	−0.1	5.6
Family housing	3.3	(1)	3.2	3.7	−0.1	3.6
Other	0.4	−0.6	−0.2	0.6	−0.8	−0.2
Total	305.6	−10.0	295.6	320.9	−9.9	311.0

[1] Less than $50 million.

Mr. ATWOOD. Military personnel reductions reflect force structure changes and adjustments in the foreign currency rate. Deductions to operations and maintenance include changes for real property maintenance and base operating support.

However—and I emphasize—flying hours and ground operating training rates were not changed. The fiscal year 1990 adjustment includes a reduction of $400 million for foreign currency rates.

The procurement title accounted for 54 percent of the 1990 reduction, even though it represents only 28 percent of the total program. This change includes reductions of $3.5 billion to aircraft, $600 million to missiles, and $900 million to shipbuilding. Reductions to SDI and the national aerospace plane account for 85 percent of the change in the research and development line.

The other category includes about $300 million for management improvements that should occur as our acquisition changes are implemented.

FISCAL YEAR 1990/FISCAL YEAR 1991 AMENDED BUDGET—BUDGET AUTHORITY BY MILITARY COMPONENT

[Billions of dollars]

	Fiscal year 1990			Fiscal year 1991		
	January budget	Adjustment	Revised request	January budget	Adjustment	Revised request
Army	80.5	−1.7	78.8	84.1	−2.2	81.8
Navy	101.7	−3.9	97.8	105.1	−1.9	103.1
Air Force	100.5	−2.7	97.7	106.6	−3.6	103.0
Defense agencies	20.3	−1.3	19.0	22.3	−1.4	20.9
Defensewide	2,6	−0.5	2.1	2,9	−0.8	2,1
Total	305.6	−10.0	295.6	320.9	−9.9	311.0

Mr. ATWOOD. The shares of the military departments have changed very little from the January budget. The Army's share in 1990 is about 27 percent, the Navy's share is about 33 percent, the Air Force's share is also 33 percent. The remaining 7 percent is allocated to the defense agencies.

Secretary Cheney set out a definitive list of priorities to ensure that our forces meet the requirements of our forward strategy and provide a convincing and effective deterrence.

No. 1, the readiness and well being of our uniformed personnel is one of the highest priorities. Therefore, military personnel programs were protected from reductions that would endanger continued success in recruiting and retaining adequate numbers of quality military personnel.

Second, since readiness is interrelated with quality personnel, we were determined to maintain a high state of training, maintain adequate munitions and spares, and provide adequate medical support.

Third, efficient procurement was protected by continuing the production of high priority programs at economic rates, continuing emphasis on the use of multiyear procurements, and cancelling some programs and deferring others. Finally, we will continue in this budget to modernize our strategic forces.

No one should think the Department was able to choose from easy alternatives or from those without risk in order to support these priorities. The review was complete, I believe objective, and no program was excluded from consideration during the budget adjustment period. The challenges and risks associated with making these changes must be shared, we believe, by Congress as well as by DOD.

FORCE STRUCTURE CHANGES

[Dollars in millions]

	Fiscal year 1990 changes		Fiscal year 1991 changes	
	Dollars	Manpower	Dollars	Manpower
Army:				
Deactivate 1 active mechanized brigade/cancel activation of selected units	−91.3	−7,929	−197.7	−7,929
Restructure Army attack helicopter untis	−2.1		−15.9	−375
Navy:				
Retire the U.S.S. *Coral Sea*	−53.3	−1,257	−106.6	−1,418
Accelerate retirement of destroyers	−74.3	−3,357	−108.6	−2,709
Deactivate 73 P-3A/B aircraft	−67.7	−876	−77.5	−876
Trasnfer 10 frigates:				
From the active forces	−29.7	−676	−70.6	−1,690
To the reserves	+28.9	+696	+55.9	+1,740
Air Force:				
Deactivate WC-130 hurricane reconnaissance aircraft	−14.0	−439	−6.2	
Restructure TR-1 program	−4.8	−71	−3.5	−70

Mr. ATWOOD. Changes in the structure of our forces were required to avoid unacceptable decreases in their effectiveness and capability. For the Army, one active mechanized brigade of the 4th Division at Fort Carson, CO, is being deactivated. We are cancelling the planned activation of 155 millimeter self-propelled Howitzer and MLRS—or multiple-launched rocket system—battalions in Europe, and we are reducing the size of the Apache attack helicopter units from 18 aircraft to 15 aircraft and making inactive 4 AH-1 Cobra battalions.

In the Navy, we are retiring the U.S.S. *Coral Sea* when the Abraham Lincoln enters the fleet in 1990, keeping the force at 14 carrier groups.

We are proposing to accelerate the retirement of DDG-2 and 37 destroyers from 2 to 11 in 1990. This results in a reduction in planned retirements in 1991 from 13 to 11.

Deactivation of 73 older P-3A and B aircraft will result in 24 active and 3 reserve P-3 squadrons, and the transfer of 3 frigates from the active Navy to the Naval Reserve, 4 in 1990 and 6 in 1991, will bring the number of frigates transferred between 1988 and 1991 to a total of 28.

As far as the Air Force is concerned, we propose to deactivate 10 C-130 Hurricane reconnaissance aircraft assigned to Keesler Air Force Base, MS. Data gathered by these aircraft are being gathered by satellite and National Oceanic and Atmospheric aircraft that are equipped with superior data collection equipment.

Finally, we are proposing to restructure the TR-1 program.

DEPARTMENT OF DEFENSE MANPOWER

[End strength in thousands]

	Fiscal year 1990	Fiscal year 1991
Military active duty:		
Fiscal year 1990 biennial request	2,138	2,135
Army	−8	−8
Navy	−6	−6
Marine Corps		
Air Force	−3	
Total active duty reductions	−17	−14
Fiscal year 1990 amended request	2,121	2,120
Selected reserves:		
Fiscal year 1990 biennial request	1,178	1,182
Reductions		
Fiscal year 1990 amended request	1,178	1,182
Civilians:		
Fiscal year 1990 biennial request	1,104	1,101
Reductions	−1	−1
Fiscal year 1990 amended request	1,104	1,100

Mr. ATWOOD. The reduction of 16,700 men and women in 1990 and 14,500 personnel in 1991 from the January budget request in military personnel results primarily from those force structure changes that I just described and do not represent an undermanning of the force.

Army reductions result from cancellation of planned activation of artillery units, deactivation of a mechanized brigade, and deactivation of one AH-1 attack helicopter battalion and reducing the AH-64 helicopter battalions from 18 to 15.

Navy reductions reflect the transfer of 10 frigates to the Reserves, the deactivation of the 73 P-3 reconnaissance aircraft and 14 destroyers, and finally the decision to keep the number of aircraft carriers at 14.

Air Force reductions are based largely on the reassessment of strength requirements associated with force structure changes reflected in the January budget as well as new force structure decisions.

Selected reserve strength is unchanged from the January level, although the Navy reserve strength will increase by 1,200 by the end of 1991 to man the 10 frigates being transferred from the active Navy.

Civilian strength reductions are the result of base operations decreases and the cancellation of planned increases in the number of Army intern positions, offsetting increases for Navy medical activities.

We were determined to protect the readiness of our existing forces; therefore, training operating tempos were protected, as were most other direct readiness programs. The Army ground operating tempo of 800 tank miles annually and an air optempo of 15 hours per month were retained, Navy flying hours of 25 hours per month and steaming days of 50.5 for the deployed fleet and 29 days for the nondeployed fleet.

The Navy primary mission readiness for tactical air operations remains at the 1989 level of 87 percent, and the Air Force supports 19.5 flight hours per month for its tactical air pilots.

Adjustments made reflect force structure and equipment modernization changes, cancellation and deferral of some programs, fact of life changes, improvements in foreign currency exchange rates, and efficiency increases. Even so, some reductions to O&M accounts will have an adverse impact on maintenance and support programs.

Most planned improvements in logistics support were deferred. Further growth in the backlog of real property maintenance will occur, and the level of base operating support services will inevitably decrease.

In keeping with the longstanding goal to improve the capability and survivability of the ICBM leg of the triad, the President decided to add mobility to a portion of our land-based missiles, redeployment of 50 Peacekeeper missiles from silos to trains garrisoned at various Air Force installations, and the amended budget also includes $100 million in 1990 and $200 million in 1991 for the small intercontinental ballistic missile program, primarily for missile certification.

The goal of SDI remains unchanged. We will continue to pursue the general framework of both space- and ground-based defenses while providing the flexibility to adjust the specific deployment schedule as evolving technology is tested and proven. The January budget request for SDI was reduced by $1 billion in 1990 and $1.3 billion in 1991.

PROGRAM TERMINATIONS

[Millions of dollars]

	Fiscal year 1990		Fiscal year 1991		Fiscal year 1992-94	
	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
Army:						
AH-64 helicopter (after 1991)	−6	−38	−6	+17	−144	−1,846
AHIP	−36	−299	−36	−328	−96	−1,072
M88 recovery vehicle		−3	−78	−90	−137	−255
Navy:						
V-22 aircraft	−12	−1,223	−24	−1,395	−157	−5,073
F-14D aircraft	−12	−365	−12	−469	−36	−1,522
Phoenix missile			−420	−333	−406	−281
SSN-688 submarine	−1	−714				

PROGRAM TERMINATIONS—Continued

[Millions of dollars]

	Fiscal year 1990		Fiscal year 1991		Fiscal year 1992–94	
	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
Air Force:						
F–15 aircraft (after 1991)		−11		+552	−78	−3,620
LANTIRN pod		−82		−31		

Note.—Dollars include RDT&E, procurement, and procurement spares.

Mr. Atwood. Relative to program terminations, the Army helicopter improvement program, the AHIP was terminated. Modification of OH–58D was terminated due to the cost of marginal capability improvement, and so that we could devote resources to continued development and production of the new generation LHX.

The M–88 A–2 improved recovery vehicle was cancelled because performance specifications could not be achieved, and the AH–64 Apache program will be terminated after 1991 production is completed. Reduced procurement objective to 807 aircraft will provide a sufficient inventory to equip 40 battalions of 15 aircraft each.

For the Navy, the Marine Corps V–22 program was terminated based on program cost growth, continuing development delays, and the availability of low-cost alternative aircraft. The V–22 will be replaced with a combination of CH–53 and CH–60 helicopters.

The F–14D production program is terminated, but the F–14 remanufacture program is retained. Fiscal year 1990 and subsequent F–14D aircraft were being procured as attrition assets pending initial development of the more survivable advanced tactical fighter.

The Phoenix missile program will be terminated after 1990, with 75 percent of the inventory objective procured. The decision was based on affordability and the recognition that a successful long-range air-to-air missile is in development.

The final SSN–688 submarine was deleted. Delivery delays in the submarines already on contract will provide a healthy backlog of work for the two current builders, Newport News and Electric Boat.

For the Air Force, the F–15E program will be terminated after 1991 production is completed. Further modernization of the deep strike interdiction force is deferred until a more survivable A–12 aircraft is available.

The LANTIRN pod program for the F–15E to provide night targeting and navigation is also terminated. The termination is consistent with the deletion of 78 F–15E aircraft since LANTIRN pods were being procured on a one-for-one basis with those aircraft.

FISCAL YEAR 1990/FISCAL YEAR 1991 PROGRAMS RESCHEDULED

[Millions of dollars]

	Fiscal year 1990 changes		Fiscal year 1991 changes	
	Quantities	Dollars	Quantities	Dollars
Army:				
ADATS missile	−234	−129	−406	−114
ATACMS missile	−124	−46		+10
UH–60 helicopter	−11	−58	−11	−44

FISCAL YEAR 1990/FISCAL YEAR 1991 PROGRAMS RESCHEDULED—Continued

[Millions of dollars]

	Fiscal year 1990 changes		Fiscal year 1991 changes	
	Quantities	Dollars	Quantities	Dollars
Navy:				
SH-60F helicopter	−18	−220		
T-45TS aircraft	−24	−293	−24	−182
F/A-18 aircraft	−6	−156	−6	−74
Coastal minehunter	−2	−110		+41
Air Force:				
B-2 bomber	(1)	−1,102		−2,865
TACIT RAINBOW missile			(1)	−30
National aerospace plane [2]		−200		−390
Defense agencies:				
SDIO		−991		−1,271

[1] Quantities classified.

[2] Legislation is proposed to provide $100 million to NASA in fiscal year 1990.

Note.—Dollars include RDT&E, procurement, and procurement spares.

Mr. Atwood. Relative to those programs that have been rescheduled, the air defense antitank system, the ADATS, is rescheduled, providing a more conservative ramp-up to full production to reduce program risk. This replaces DIVAD, which was cancelled.

The Army tactical missile system, ATACMS, is fired from multilaunch rocket systems. The reduction of 124 Army tactical missiles in 1990 reflects the impact of a 4-month delay in awarding the initial production contract.

The UH-60 helicopter program was rescheduled. A minor reduction in procurement quantity preserves an economic production rate in the multiyear procurement strategy.

For the Navy, the SH-60F antisubmarine warfare helicopter program was rescheduled. It is a variant of the UH-60 and carries a dipping sonar for antisubmarine warfare close to the carrier. The deletion of 18 helicopters is based on the failure to successfully complete operational testing. Execution of the program will be delayed pending the outcome of this testing.

Forty-eight T-45TS aircraft were deferred to provide time to correct deficiencies identified during field testing.

The F-18 fighter program is rescheduled based on affordability and economic production rate is maintained when combined with foreign military sales orders. Two coastal minehunters were deleted in 1990 and one LHDM amphibious assault ship was added in 1991. The production capability of the two shipbuilders precludes construction of more than one ship in 1990.

As far as the Air Force is concerned, the B-2 production was rephased in recognition of delays in the flight test program and to reduce concurrency between development and procurement. The proposed multiyear contract is deferred for 1 year.

The TACIT RAINBOW missile program was reduced in recognition of test schedule slippage.

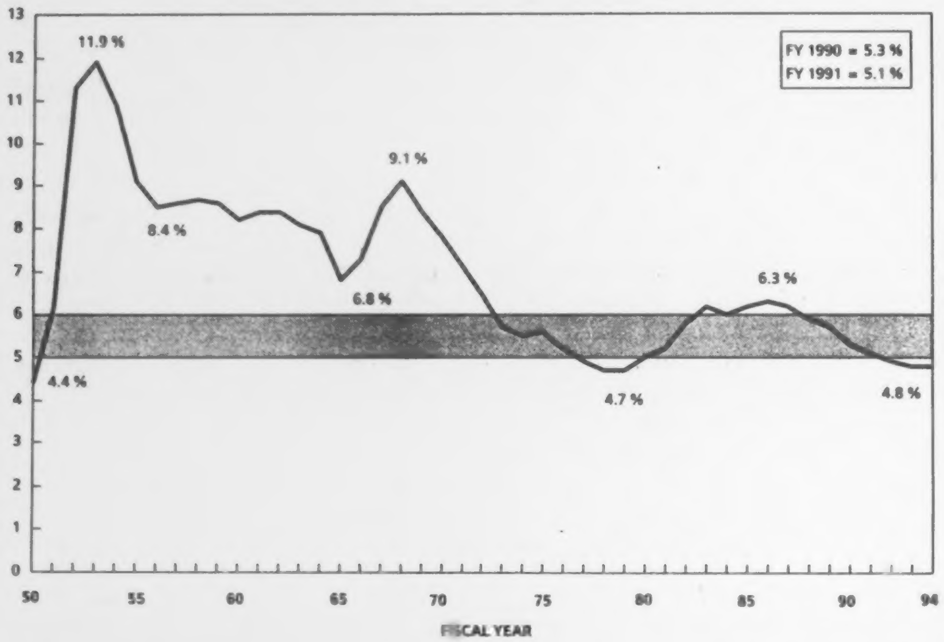
The national aerospace plane legislation will be proposed to allow NASA to obligate up to $100 million in 1990 defense funds for that program.

We did protect programs. We plan to continue production of several key systems at or near the rates included in the January budget. For the Army, the proposed 603 Abrams M-1 tanks in 1990 and 516 in 1991, and 600 Bradley fighting vehicles in each year is unchanged.

The budget includes one Trident submarine in both 1990 and 1991, as well as 63 Trident-II missiles in 1990 and 52 in 1991.

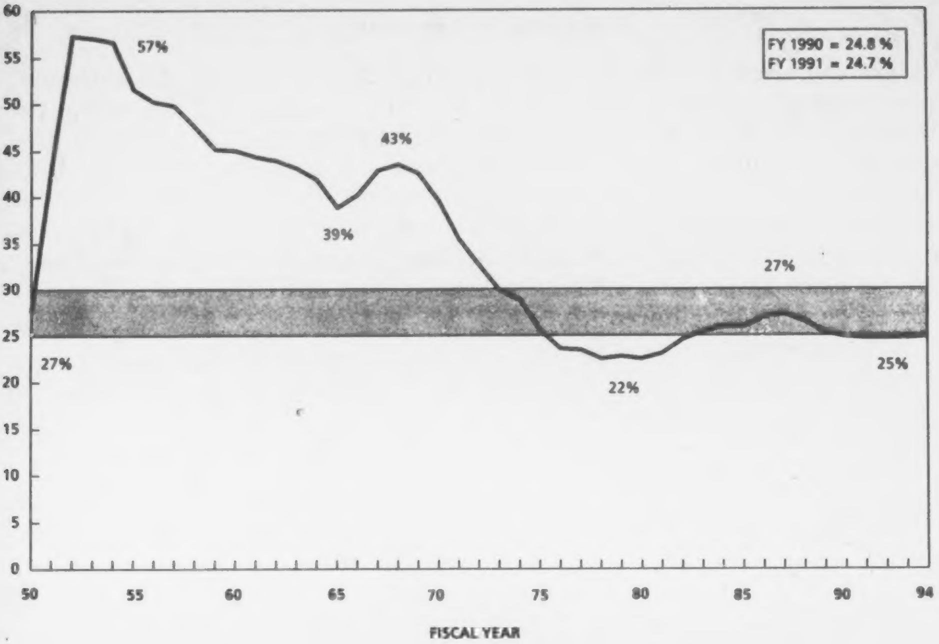
The F-16 procurement of 150 aircraft in both 1990 and 1991 is unchanged, and funds are requested for 6 C-17 aircraft in 1990 and 10 in 1991.

Defense Outlays as a Share of GNP



Affordability of adequate defense resources is not an issue when viewed in terms of how much of our resources we spend on defense. Projected outlays for 1990 and 1991 equal slightly more than 5 percent of GNP, the same as a decade ago. Even at the highest point in the 1980's, the defense share was lower than at any time between 1952 and 1972. In fact, by 1994 we estimate the defense share of GNP will reach the second-lowest share since 1950.

Defense as a Share of Federal Outlays



The defense share of Federal spending will be less than 25 percent in 1991, only slightly higher than in 1980. Even at the highest point in the 1980's, the defense share of total outlays was lower than at any time between 1950 and 1974. The defense percent share is expected to remain at or near the 25 percent level through 1994.

The real affordability issue is how well we budget and manage these defense resources. The effective management of defense resources depends primarily on achieving long-term stable and predictable funding and efficient acquisition of our weapons systems.

Beginning in 1985 and continuing in every year since, the defense budget has been cut to help reduce the Federal deficit. These cuts have reduced defense capabilities, disrupted the defense planning and programming process, and added significantly to the cost of defense. A stable defense level, Congressional implementation of biennial budgeting, multiyear procurement, and funding of procurement at economic rates will provide for efficient planning and allocation of our resources.

Approval of biennial budgets could provide the resource stability necessary for economical program execution. Program stability contributes to reducing total program cost while facilitating long-range planning.

We have to make greater use of multiyear procurements and ensure that our programs are funded at economic production rates.

The President has asked DOD to undertake a comprehensive management review in order to implement fully the recommendations of the Packard Commission and to put in place other necessary improvements. That review is making good progress and the Secretary intends to make our recommendations known to the President later this month.

PREPARED STATEMENT

I am convinced that we need significant changes in the defense procurement process. Otherwise we will simply not be able to afford the force structure we need. At the conclusion of the management review we intend to recommend a number of reforms that will begin, we believe, to reverse this trend. Some we will be able to implement unilaterally; others we believe will require legislative action. The strong support of this Committee and the entire Congress is essential to the success of any reform effort.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF DONALD J. ATWOOD

Mr. Chairman, Members of the Committee:

It is indeed a pleasure to come before this Committee, in my first congressional appearance as Deputy Secretary of Defense. Today as we discuss the President's Amended Defense Budget for FY 1990 and FY 1991, I believe it is imperative that we focus on the threat rather than the encouraging rhetoric now coming from our principal adversary.

Preserving and enhancing our revitalized military capabilities in the face of ever increasing and more sophisticated threats is always a difficult challenge. But during an extended period of extreme fiscal constraint, our shared task becomes even more challenging, adding an element of risk that places a premium on making the right choices. It also requires that the decisions we make today enable us to achieve the necessary level of defense at a cost we can afford in the future. The decisions we have had to make in preparing this amended budget and the management improvements we will propose shortly were guided by that premise.

Since the Committee has had several months to review the biennial budget that was submitted to the Congress in January, I would like to focus today primarily on the budgetary decisions that were made in amending the FY 1990/FY 1991 defense budget and provide some thoughts on improving the management of defense resources. However, before discussing the specific adjustments that were made and the effect they will have on the structure and capabilities of our forces, I will address briefly how we viewed the changes occurring in the Soviet Union when we determined the necessary level of defense resources.

U.S.-SOVIET RELATIONS

Some argue that the changes taking place in the Soviet Union are significantly reducing the threat to our security, and therefore we can afford to reduce our defense resource level. This position presumes that the initiatives proposed by Mr. Gorbachev represent a fundamental and lasting shift in Soviet policy. Certainly we all hope that these efforts are successful and contribute to a lessening of tensions worldwide. However, we cannot afford to react unilaterally to political rhetoric and proposals that have not yet been fully implemented. We have major questions about Soviet reductions, plans for restructuring their forces, and future military spending and production. Despite Mr. Gorbachev's pronounced commitment to a defensive military doctrine, the Soviet Union continues to improve its forces, which are already the largest in the world and outnumber those of NATO in most categories of conventional forces. Even after the reductions announced by the Soviets occur, the Warsaw Pact will still have more than a two to one advantage in tanks and artillery over existing NATO forces. It certainly would not be in the best interests of U.S. and allied security to respond to Soviet reductions with further unilateral cuts of our own that would result in preserving their conventional superiority. During the past four years the United States already has made unilateral cuts. Proposed Soviet reductions should be viewed as being more than offset by reductions we have already made.

Changes to our force structure and military strategy should be made in response to clear and demonstrated long-term changes in the Soviet Union's political posture--not merely its military posture and reassuring rhetoric. It is important to remain cautious in our reaction to the prospect of changes in the Soviet Union. We must adopt a stance that does not place us in a weakened position.

Peace through strength works. Strength remains the best deterrent to aggression, and has proven to be the key to successful arms reduction negotiations. The recent INF treaty and continuing serious arms negotiations with the Soviets are testimony to this premise. We must retain the maximum flexibility in our negotiating posture. We must not weaken our position at the bargaining table. Therefore, we must ensure that defense budget reductions are made in response to commensurate decreases in the threats to U.S. interests.

These key points are being considered during the Defense Strategy Review, directed by the President, which is currently under way. The results of this review will be of assistance in making major national security decisions in the next several months and in the future.

REVISED FY 1990/FY 1991 BUDGET

The Defense budget presented by President Reagan in January provided for 2 percent real growth in FY 1990 and in FY 1991. President Bush proposed a one-year freeze in real growth for defense with the understanding that this reduced defense spending level would be part of a comprehensive plan to meet Gramm-Rudman-Hollings targets and incorporate reforms which bring stability to the budget process. He proposed real increases of 1 percent in FY 1991 and FY 1992 and 2 percent in FY 1993 to maintain a steady course in national defense. The bipartisan agreement with the Congress reduced the FY 1990 defense budget by an additional $3.7 billion.

As a result of these further reductions, the budget now before the Congress requests budget authority of $295.6 billion in FY 1990 and $311 billion in FY 1991. Outlays are projected at $289.8 billion in FY 1990 and $297.9 billion in FY 1991. This budget represents a reduction in budget authority of $10 billion in FY 1990 and $9.9 billion in FY 1991 from the January level. These reductions are in addition to the $300 billion cut out of the FY 1988-FY 1994 program that was planned in January 1987. The magnitude of these reductions since 1987, and the fact that the FY 1990 budget marks the fifth consecutive year of declining real growth in defense budgets sometimes seems to be lost on the general public. It has not been lost on us. Rather, it has left us with the terribly difficult and complex task of adjusting our defense program to accommodate these latest reductions.

DEFENSE PRIORITIES

Continuing resource constraints have made it exceedingly difficult to maintain an acceptable risk in regard to our country's defense. It is imperative that our forces meet the requirements of our strategy in order to provide a convincing and effective deterrent to threats to our security.

Our military strategy requires that our forces be equipped and trained to operate in a variety of terrains, climates, and combat environments, and to deploy quickly to any location where they might be needed. In order to respond to aggression as far forward from our shores as possible, we maintain forces at bases in Europe and the East Asia/Pacific region while our naval carrier battle groups and amphibious forces are deployed to various areas ensuring freedom of navigation and protecting essential maritime trade. Because we cannot predict where we may need our forces, we also maintain extensive airlift and sealift capability and preposition equipment in forward areas for use by deploying forces.

Secretary Cheney set out a definitive list of priorities to support our forces within the context of this forward strategy and required that these priorities guide the budget review process. These priorities are: quality people, readiness and sustainability, efficient procurement and strategic modernization.

The readiness and well-being of our uniformed personnel continue to be the highest priorities. Our success in attracting and retaining high quality military personnel in recent years results largely from providing adequate and fair compensation and other incentives to encourage service in the armed forces. Therefore, great care was taken to protect military personnel and medical support programs from reductions that would endanger continued success in recruiting and retaining adequate numbers of quality military personnel.

Since readiness is interrelated with quality personnel, we were determined to maintain a high state of training, maintain adequate munitions and spares, and hold maintenance backlogs to a minimum. To protect both the quality and readiness of our forces, we reduced manpower levels and made changes to our force structure.

Efficient procurement was protected by continuing the production of high priority programs at economic rates, continuing emphasis on the use of Multiyear Procurement (MYP), cancelling some lower priority programs or those that could not meet cost or performance standards, and deferring others.

We have continued the modernization of our strategic forces with the development of a new penetrating bomber, the procurement of TRIDENT submarines and D-5 missiles to replace the aging, less capable POSEIDON SSBNs, and the development of mobile basing for ICBMs in the early 1990s.

No one should think that the Department was able to choose from easy alternatives, or from those without risk, in order to support these priorities; quite the opposite, risk was everywhere. No matter where we turned in our review, we were faced with choices that required serious changes in our forces or involved tradeoffs we didn't want to make. In addition, the long-term affordability of defense modernization could be placed in jeopardy by the necessity to make decisions to reschedule some programs that would undoubtedly add to their total cost. But the importance of maintaining effective and credible forces demanded that the tough choices be made.

The review was complete and objective and no program was excluded from consideration. Recommendations from the Military Departments, the Joint Chiefs of Staff, Defense Agencies, Commanders-in-Chief of the Unified and Specified Commands, and OSD staff were all considered by the Defense Resources Board.

I am well aware that many of these choices will prove unpopular to some constituency. But I must point out that the responsibility in providing the nation with an adequate and efficient defense is one that the Administration and the Congress share. And the challenges and risks associated with making these changes must be shared by the Congress as well. Therefore, I cannot overstate the importance of the Congress' continued support of the bipartisan budget agreement on the defense funding level and your support for the changes we have recommended. Efforts by the Congress to change our priorities or the composition of our revamped forces will have a detrimental effect on our ability to sustain an efficient and effective national defense.

FY 1990/FY 1991 BUDGET ADJUSTMENTS

Force Structure

Changes to the structure of our forces were required to avoid unacceptable decreases in their effectiveness and capability. The Army will deactivate a mechanized brigade, cancel the planned conversion of additional artillery units in Europe and restructure attack helicopter battalions in FY 1990/FY 1991. The Navy will transfer 4 additional frigates from the active Navy to the Naval Reserve in FY 1990 and 6 in FY 1991. Retirements of DDG-2 and DDG-37 destroyers have been accelerated from those planned in the January budget. In addition, the Navy will retire the USS CORAL SEA when the USS ABRAHAM LINCOLN enters the fleet in FY 1990. The Navy will also deactivate 73 older P-3A/B aircraft. The Air Force deactivates its WC-130 aircraft in FY 1990 and restructures its TR-1 program.

Manpower

The net change in military personnel resulting primarily from these force structure changes is a reduction of 16,800 and 14,000 personnel in FY 1990 and FY 1991, respectively, below those levels originally supported in the FY 1990/FY 1991 budget. Army active strength was reduced by 7,900 in FY 1990 and by 8,300 in FY 1991 from previously planned levels. Navy active strength will be reduced by about 6,000 from the January budget levels in both years. Air Force active strength was reduced by 3,200 for FY 1990 and remains the same for FY 1991 compared to the January plan, primarily due to a more rapid phasing of strength reductions associated with previously approved force structure changes. Naval Reserve strength will increase by 1,200 reservists by FY 1991 to man the additional frigates. Strength levels for other reserve components were essentially unchanged. Civilian strength is reduced by about 1,000 in both years. We anticipate that further personnel reductions will be made to implement recommendations resulting from the Defense Management Review now in progress. Reductions of $286 million in FY 1990 and $434 million in FY 1991 are included for this purpose.

Additional savings were achieved in the Military Personnel accounts by adjusting scheduled special training of Reserve personnel in the Army Guard and Reserve. Also, improvement in the strength of the dollar relative to most foreign currencies since the submission of the budget in January has allowed us to project a reduction of $182 million in FY 1990 and $179 million in FY 1991 in the cost of overseas station allowances.

The revised active duty strength level in FY 1990 is 2,121,500 and 2,120,100 in FY 1991. The revised total manpower levels for our reserve forces are 1,178,200 in FY 1990 and 1,182,200 in FY 1991. To continue meeting military manpower requirements on a voluntary basis, we must provide competitive compensation, adequate family support, reasonable living and working conditions, and assistance programs for post-secondary education. Most important, military pay raises of 3.6 percent effective January 1, 1990 and 3.2 percent effective January 1, 1991 have been requested to ensure that the value of military compensation is not eroded by inflation.

Readiness

Our adjustments reflect force structure and equipment modernization changes, cancellation and deferral of some programs, fact-of-life adjustments, improvements in foreign currency exchange rates, and efficiency increases. Some reductions to O&M accounts will have an adverse impact on maintenance and support programs. Most planned improvements in logistical support programs were deferred, further growth in the backlog of real property maintenance will occur, and the level of base operating support services will decrease.

Training operating tempos were protected as were most other direct readiness programs. The FY 1990/FY 1991 budget provides for Army ground Operating Tempo (OPTEMPO) of 800 tank miles annually and an air OPTEMPO of 15 hours per month. The Navy Primary Mission Readiness for tactical air operations remains at the FY 1989 level of 87 percent. Similarly, ship steaming days for the deployed and non-deployed fleets remain at 50.5 and 29 days per quarter, respectively. The Air Force supports 19.5 flight hours per month for its tactical air pilots.

Funding of $500 million is provided in FY 1990 and FY 1991 to implement the up-front cost provisions of the base closure plan. These funds are critical to the successful execution of the program and the realization of long-term savings.

Acquisition

At the President's direction, a major Defense Strategy Review is underway. In the interim and in keeping with the longstanding goal to improve the capability and survivability of the ICBM leg of the TRIAD, the President decided to add mobility to a portion of our land based missiles. The decision includes redeployment of 50 Peacekeeper missiles from silos to trains, garrisoned at various Air Force installations. The amended budget also includes $100 million in FY 1990 and $200 million in FY 1991 for the small intercontinental ballistic missile program, primarily for missile certification.

The goal of the Strategic Defense Initiative (SDI) remains unchanged. We will continue to pursue the general framework of both space- and ground-based defenses while providing the flexibility to adjust the specific deployment schedule as evolving technology is tested and proven. A revised program would continue toward deployment of a system that will meet the requirements of Phase I by focusing on evaluating the potential of the most rapidly advancing technologies such as "Brilliant Pebbles." The January budget request for SDI was reduced by $1.0 billion in FY 1990 and $1.3 billion in FY 1991. The revised funding levels are $4.6 billion and $5.4 billion in FY 1990 and FY 1991, respectively.

Major programs that were rescheduled include the Army's UH-60 helicopter, Air Defense Anti-tank System (ADATS) and Army Tactical Missile System (ATACMS), the Air Force TACIT RAINBOW missile, and the Navy's SH-60F Antisubmarine Warfare helicopter and F/A-18 Fighter. Two Coastal Minehunters were deleted in FY 1990 and one LHD-1 Amphibious Assault ship was added in FY 1991. Forty-eight T-45TS aircraft were deferred to provide time to correct deficiencies identified during field testing. B-2 production was rephased in recognition of delays in the test flight program. In rephasing the B-2, differences in estimates of the cost of this program emerged. The Secretary has directed a special session of the Defense Acquisition Board to advise him on this issue. The Congress will be notified of the results.

Among the programs cancelled are the Army Helicopter Improvement Program (AHIP), the Navy V-22 program, and the Navy F-14D production program (although the F-14 remanufacture program was retained). The Navy's Phoenix missile program was terminated after the FY 1990 buy, the final SSN-688 submarine was deleted, the M88A2 Improved Recovery Vehicle was cancelled, and the LANTIRN program was terminated. The Air Force RF-16 reconnaissance aircraft development program also was cancelled in FY 1990. The F-15E and AH-64 Apache programs will be terminated after FY 1991 production is completed.

The budget proposes that NASA assume the funding and management responsibilities for the National Aerospace Plane (NASP). DoD reduced the $300 million funding request for the NASP by $200 million. Legislation will be proposed to allow NASA to obligate up to $100 million of FY 1990 defense funds for the NASP. The President's National Space Council will review the future funding and management of the program.

We plan to continue production of several key systems at or near the rates included in the January budget. The budget includes 1 TRIDENT Submarine in both FY 1990 and FY 1991, as well as 63 TRIDENT II missiles in FY 1990 and 52 in FY 1991. The proposed 603 Abrams (M-1) tanks in FY 1990 and 516 in FY 1991, and 600 Bradley Fighting Vehicles in each year is unchanged from the January request. Tactical air force modernization is supported by emphasizing efficient production rates for our most affordable tactical combat aircraft, the F-16 and F/A-18, to prevent further force structure reductions or undesirable increases in the average age of the force. Production of the more sophisticated, costly aircraft such as the F-14D and F-15E is being curtailed. In addition, investment in mobility has been largely protected. We are requesting funds for 6 C-17 aircraft in FY 1990 and 10 aircraft in FY 1991.

The amended FY 1990/1991 R&D request will provide for significant effort in basic research and exploratory technology addressing all of the scientific areas that have military relevance. Modernization of our strategic and conventional forces will continue with significant funding for SDI, mobile ICBMs, B-2 bomber and TRIDENT missile and tactical systems such as ATA, ATF, LHX, C-17, anti-armor projects, close air support aircraft, and several integrated command and control and communications programs. Modernization of theater nuclear forces--Follow-On-To-Lance and a Tactical Air-to-Surface Missile (TASM)--remain an essential requirement for sustaining NATO's nuclear deterrence. We will place special management attention on the avoidance of duplicative efforts, the use of unmanned vehicles wherever practical and the upgrading of existing systems rather than starting new developments. We will be receptive to cooperative efforts with our NATO allies whenever such joint efforts can satisfy our needs and seek to leverage our IR&D investment to obtain technology advances in areas we cannot afford to fund independently.

Military Construction/Family Housing

Adjustments to the Military Construction and Family Housing Construction accounts followed our personnel, readiness and modernization priorities. Military construction projects in direct support of new weapon systems and force initiatives were retained, although some were restructured. For example, the Air Force restructured the PEACEKEEPER and B-2 Bomber construction programs. Additional reductions consisted primarily of the deferral or deletion of lower-priority projects.

These adjustments will result in a total FY 1990 military construction program with negative real growth of 18 percent. The FY 1991 program recoups some of this loss but, in real terms, is still 6.4 percent less than the FY 1989 level. Excluding foreign currency adjustments, virtually no reductions were made to the Family Housing accounts, which total $3.2 billion for FY 1990 and $3.6 billion for FY 1991.

MANAGING DEFENSE RESOURCES

The affordability of defense spending is often viewed in terms of the defense share of the Gross National Product (GNP) and the federal budget. But an objective look at these measures points out that there is no discernable affordability issue in how much of our national or federal resources we allocate for defense. Projected outlays for FY 1990 and FY 1991 equal slightly more than 5 percent of GNP, the same share as a decade ago. The defense share of federal spending will be less than 25 percent in FY 1991, only slightly higher than in FY 1980. From this standpoint, we can indeed afford the defense we need. The real affordability issue is how well we budget and manage our defense resources.

The effective management of defense resources depends primarily on achieving long-term stable and predictable funding and efficient acquisition of our weapon systems. For too long, the Department of Defense has been on a fiscal roller coaster, a recipe for waste and inefficiency. For a number of years we have followed the path of developing long-term plans that provide for growth, only to have current budget year requests cut during the congressional budget review, providing for negative growth. Beginning in 1985 and continuing in every year since, the defense budget has been cut to help reduce the federal deficit. These cuts have reduced defense capabilities. Reductions continually disrupt the defense planning and programming process and add significantly to the cost of defense. This pattern could lead to a long-term period of sustained decline in defense capabilities.

A stable defense level, congressional implementation of biennial budgeting, multiyear procurement, and funding of production at economic rates will provide for efficient planning and allocation of resources. Although the first biennial budget was not acted upon in its entirety by the Congress, it proved to be an invaluable tool for effective planning within the Department of Defense.

Approval of biennial budgets could provide the resource stability necessary for economical program execution.

In his State of the Union Address, the President tasked DoD to undertake a comprehensive management review in order to implement fully the recommendations of the Packard Commission and put in place other necessary improvements. The review is making good progress, and the Secretary intends to make our recommendations to the President shortly.

I am convinced we need significant changes in the defense procurement process. In the future, we simply will not be able to afford the force structure we will need, unless we begin now to make changes that will produce better quality systems at lower cost.

At the conclusion of the management review, we intend to recommend a number of reforms that will begin to do just that. I do not expect that these steps will be easy; the easy answers have all been tried. I do not expect these steps to be popular; dramatic changes rarely are. I do know that if they are to succeed, these reform steps must meet three essential criteria: 1) they must tackle the problems head-on; 2) the leadership of the Department of Defense must be personally committed to their success; and 3) they must have the clear and unwavering support of the Administration and the Congress.

I recognize the responsibility for initiating and implementing significant reform rests with the civilian and military leadership of the Department. However, we also recognize the strong support of this committee and the entire Congress is essential to the success of any reform effort. Many of these changes can be done within existing laws, but we will also seek legislative action to do the job. For that, we will need your support.

We need to build a process that employs sound business practices to ensure the stability of individual programs. We should be allowed to set our goals, have programs authorized to meet them, and be provided stable funding over the life of each program. Program stability contributes to reducing total program costs while facilitating long-range planning. It allows for firm development schedules, set specifications, and steady production rates.

Specifically, we must make greater use of Multiyear Procurement (MYP). MYP has yielded significant savings since its inception in 1981, through economical buys and by reducing the uncertainty inherent in single-year funding. MYP programs approved from FY 1982 through FY 1989 will produce savings of $9.0 billion. While fiscal constraints necessitated some adjustments to the MYP program, we are continuing to pursue a significant increase in the use of MYP by recommending 27 programs for MYP in the FY 1990/FY 1991 budget, including the Bradley Fighting Vehicle, DDG-51 AEGIS destroyer, F/A-18 aircraft, DSP satellite, Family of Medium Tactical Vehicles, and the B-2 bomber.

In addition, we look to the Congress to share in the reform process by streamlining its procedures of oversight and budgeting, and endorsing more efficient practices such as two-year budgeting and multiyear procurement. Timely and responsive congressional action is essential to stability and predictability in defense funding. It is very encouraging that the Congress was able to pass and send the FY 1989 Defense Authorization and Appropriation Bills to the President before the beginning of the fiscal year. However, the burdensome size and complexity of the congressional oversight structure has resulted in an increasingly time-consuming process. Defense legislation has become laden with restrictions on subjects ranging from contracting procedures to obligation restrictions, as the Congress has sought to manage the funding and execution of our programs in more and more detail. We will work with the Congress to reverse this trend.

CONCLUSION

In the urgency surrounding the current congressional review of the defense budget, we must not forget the primary purpose of our shared responsibility: to work for peace while ensuring America's freedom and securing her vital interests by maintaining ready and credible defense forces. We have made the necessary adjustments to our program to accommodate the latest reductions to defense funding with this responsibility foremost in our minds. The Congress has expressed its willingness to work with us by supporting the bipartisan budget agreement. The decisions we have made together have set the stage for an effective defense capability in the 1990s and beyond. It is imperative to the future of our security, peace, and freedom that this spirit of cooperation continue and these decisions be supported during this budget review.

Senator INOUYE. Thank you very much.

Your statement would suggest that, as always, the debate on defense spending will be an interesting exercise. But I think we have a problem here.

As I noted in my opening statement, CBO has maintained that your budget submission is at $303 billion in outlays, which is $3.8 billion higher than the recent bipartisan budget agreement allows. The budget agreement stipulates—and I think this is a very important quote—"that Congressional enforcement of these levels in the legislative process will be based on CBO scoring."

By that, if we—and that is the committee—produce a bill that adopts your budget, we will be in violation of this budget act and the budget agreement because the deficit impact is $3.8 billion too high.

Do you agree with this conclusion?

Mr. ATWOOD. A discussion of this nature makes me feel I am back in the industrial world because we have those sorts of discussions and misunderstandings all of the time as we talk about outlays.

My understanding of the situation is that based on past history there have been very few years in which there has been unanimity of agreement between the CBO and what the DOD has said will happen. But they have in the past sat down and discussed each other's points of view and reached a reasonable understanding of what it should be. I would propose that they do that now, that our people work with the Committee and with the CBO, to get a full understanding of it.

Senator INOUYE. As I suggested when we got together earlier, this will be one of the most fundamental questions we will have to resolve, so I would suggest that as soon as possible your staff and the Committee staff get together with CBO and try to resolve this matter because we have not been able to resolve it for years now, and as long as we do not resolve this we will be constantly facing, I think, unnecessary debates.

There are some that would suggest that if we insist on following DOD we would have to cut the budget by another $10 billion, and if it was painful to do what you have done so far, imagine what it will be with an additional $10 billion cut.

I would like to ask another question, and I think this one is a rather basic one. Your statement notes that the budget that you have just submitted precedes the conclusion of the strategic review which was ordered by President Bush, a very important review on the strategy.

Now this review is to set national security priorities for this administration and as a guide to future arms reductions negotiations. Does this mean that when the review is completed and conclusions are reached you will be submitting an amended budget again?

Mr. Atwood. The process that you describe, because of the timing and the manning up of DOD since the first of the year, has probably caused as much consternation as anything that I can imagine. You normally think of a review of national strategy, followed by a deep review of the defense strategy which fulfills that national security strategy. You then think about putting together defense guides which form the basis on which a budget is put together.

Unfortunately, because of the timing and the sequence of events that took place in putting people into place, much of it was done by personnel who were carryover from the prior years and the order was not done sequentially. As a result, it was necessary to put the budget together prior to the completion of either the national security review or the establishment of defense guides.

However, albeit that sounds as though we had the cart before the horse, there is a lot of work that took place between those who are working on the strategy reviews and the defense guidelines and the people working on the budget. I do not foresee that there will be any change in the budget. Obviously I could be surprised as we go along, but I foresee that we have been working closely together all during this period to ensure that there would be no major surprises.

CONSULTATION OR REVIEW

Senator Inouye. Will the leadership of the Congress be called upon for consultation or review of this strategic review?

Mr. Atwood. That is a strategy review that we are doing for the President, and I assume that from that moment on—we will be submitting it to the President in the very near future, as we will be the management review that we are doing.

Senator Inouye. I have many other questions, but at this time I would like to call upon my colleagues. Senator Specter.

V-22 RECOMMENDATIONS

Senator Specter. Thank you very much, Mr. Chairman.

I join my colleagues, Secretary Atwood, in welcoming you to this hearing, your first Congressional hearing, and we thank you for taking on this important, always difficult, sometimes thankless job.

When you outlined the kinds of reductions, we understand that there are a great many hard choices which you have to make, considering the budget constraints with which you are faced. But inevitably there will be some disagreements by the Congress, by this Committee, subcommittee, individual Senators, and that is a subject where I would like to start this morning, not that it in any way diminishes respect for your presentation and the efforts which you and the Secretary have made.

This item, which is the V-22, has a very profound impact on my home State, which I acknowledge at the outset, but I believe that there are very important national defense implications on this program far beyond the jobs or parochial interests represented for Pennsylvania.

When the V-22 was at an early stage—I think about 4 years ago—I visited the Boeing plant in Lester, PA, to take a look at it and was enormously impressed with the advance in technology on the V-22, which rises like a helicopter and then flies straight forward.

In preparing for this hearing and in reviewing the support which this program has had over the years, I have been very much impressed with the fact that for 8 years there have been very positive recommendations made by the Department of Defense that three of the witnesses, Commandants of the Marine Corps—General Barrow, General Kelly, and now General Gray—have supported the V-22 in unusually strong statements.

Secretary Cheney was quoted as saying, "I feel like I was breaking Al Gray's heart," in referring to the V-22. This particular program has had unusually strong support in the Congress. There was an unusual step taken by the Senate in adopting a resolution urging the President to fully fund the program, and although it was a voice vote it had very strong support by Senator Stevens, who is the ranking Republican on this subcommittee, for years was the chairman of this subcommittee, 6 years—1981 through 1986—and is a recognized expert.

He was joined by Senator Glenn, a key member of the Armed Services Committee and if anybody knows Marine needs I think Senator John Glenn would be a person to know that.

The capabilities of the V-22 are really remarkable. They have the capacity to go 200 miles from an amphibious assault fleet. They are able to carry troops. As you and I had discussed earlier this morning—Senator Stevens has just joined us after I paid him the compliment about his support for the V-22—and at a greater distance at twice the speed.

Now the first question I have for you, Mr. Secretary, is your reference to the availability of adequate replacements at lower cost. Let me start in a two-point way. How can we justify abandoning the $2.5 billion already invested in the V-22 and how can we characterize the replacements as adequate in light of the conceded superiority of the V-22?

Mr. Atwood. I would like to start off by saying I concur with very much of what you said. No one should get any indication whatsoever that the V-22 is not a fine aircraft or that it did not have DOD support, as well as the services.

It was in the budget and a rethinking of the V-22 came about only with the most recent very dramatic cuts that have been made. If the money were available to put us back where we were last January, I do not think there is any question at all but what the V-22 would be back in there.

So I wanted to be one of the first to say we recognize the services' needs. We recognize the value of the aircraft.

As far as the discussion which took place and recognizing that severe cuts had to be made, we were looking for programs which perhaps did not provide the return for the dollars that needed to be spent compared to other programs. The support for the V-22 in terms of the needs and missions of all of the services and the availability of helicopters to do, albeit not to the degree that the V-22 could do it, mitigated against a continuation of it at this time with the funding limitations that were put on us.

H-46 HELICOPTERS

Senator SPECTER. Mr. Secretary, is it not true that you would be looking at H-46 helicopters and that they have been in service for about 2 decades and are really pretty much worn out, so that existing helicopters, the H-46's, are not really adequate to even begin to do a lesser job contrasted with the V-22?

Mr. ATWOOD. When you say would not be adequate to do a lesser job, they are adequate to do a lesser job, and I would not want to indicate that they are so worn out that they could not be used.

The question is regarding the superiority of the V-22 to do that mission sufficiently to warrant the added investment that you would have to make.

H-46 SPECIFICATIONS

Senator SPECTER. Mr. Secretary, let me ask you to supplement your answer for the record. I know that inevitably at the beginning of a job there are many technical matters where you will have to rely on backup and staff. But I would like specifications as to the condition of the H-46 helicopters and what they are in a position to do and what the loss will be for the national defense in terms of speed of mission and in terms of number of personnel who can be carried by the alternatives, so that we can have a factual basis for evaluating your conclusion that there are adequate substitutes at a lower cost.

[The information follows:]

You have asked several questions. Before providing the details, permit me to offer you some summary observations. First, any problems with the CH-46 fleet are independent of the V-22 decision and would have to be addressed whether the V-22 or our proposed alternative fleet is procured. Second, the alternative fleets were designed by the Department of the Navy to be equal-lift fleets. Third, the V-22 does indeed have speed and range advantages over the helicopters, but as actually utilized in ship-to-shore movement, these advantages are not as significant as they might first appear. The detailed information you requested follows:

CH-46 FLEET CONDITION

The CH-46 fleet will soon complete a safety-reliability-maintainability (SR&M) program. Key fuselage components have been replaced and the fatigue life of the fuselage is not of concern.

Average flight hours for CH-46 is 6,000 hours.

This year three aircraft will cross the 10,000 hour point. Some commercial operators have more than 30,000 hours on their aircraft.

We have not tested the drive system and dynamic components above 10,000 hours although we now have tests underway to do that.

Neither alternative would replace all operating CH-46's prior to 1999. The reduced cost of the all helicopter alternative will make it less difficult to find the resources necessary to address any CH-46 problems. The helicopter alternative also provides more total aircraft earlier in the FYDP with which to address the problem.

USMC AIRCRAFT LIFT CAPABILITY

	CH-46	CH-53D	CH-53A	V-22	CH-53E	CH-60
Maximum payload (lbs, 300ft/91.5oF)[1]	4,500	9,400	4,000	11,400	24,000	4,600
Radius (nm, internal troops only)	68	100	50	340	200	[2] 140
Troops[3]	18	32	[4] 17	24	[5] 32	12
HMMWV Capability (at 50nm radius)	No	Yes	No	Yes	Yes	No

[1] Maximum payload at 50nm combat radius, achieved in some cases by carrying less than full fuel (internal or external sponsons). Carrying more fuel increases combat radii but at the expense of payload.

[2] Sikorsky estimates 140nm radius based on Army H-60 MSIP improvements.

[3] USMC policy restricts troop capacity to 24 per aircraft.

[4] Same cabin as CH-53D but limited by payload.

[5] CH-53E not normally deployed as a troop transport.

ARMS REDUCTION PRIORITIES

Senator Specter. I would also appreciate an evaluation in writing—or you may want to comment here, but there is a limited amount of time—as to the issue of priorities. Considering the complex issues on arms reduction, the INF Treaty, the prospective movement on a strategic arms reduction treaty, the kinds of funds which are present in both MX and Midgetman and the nuclear deterrent, whether there is not a greater need in terms of priorities to support the V-22 with what the Marines have testified about, looking to conventional warfare and the kind of brushfires which we are likely to face.

I would like to see a careful assessment as the Department of Defense now views the conventional warfare priority contrasted with the very heavy investment in other lines. I acknowledge the importance of the nuclear force and the SDI, but I would like to see your evaluation of that priority.

[The information follows:]

Prioritization of Nuclear and Conventional Defense Spending

The U.S. relies on a full range of forces, from strategic and nonstrategic nuclear forces, through conventional air, land and naval forces, to special operations forces, to make our strategy of deterrence and defense through flexible response credible and effective. Our nuclear deterrent provides for a series of large-scale alternative responses to a massive Soviet nuclear attack and supplements our forward-deployed forces in deterring attacks against our allies. Conventional forces are necessary for contingencies across the conflict spectrum, providing a credible deterrent to potential adversaries, who cannot doubt that we will respond appropriately to conventional aggression.

The mix of nuclear and general purpose forces, and the funding levels associated with it, are driven by our policy, and strategy. We believe that the most likely threat to U.S. national security interests in the coming years is low intensity conflict (LIC). However, the most dangerous threat to the security of our country would, of course, be a nuclear attack. Currently, 11 percent of the defense budget is spent on strategic nuclear forces. General purpose forces absorb 48 percent of the budget and the remaining 40 percent is spent on defense wide missions and support. In this context, resource allocation decisions to develop and eliminate particular conventional systems are based on assessment of the additional capability they would provide for the level of investment as compared to other systems.

While there is an increasing need to strengthen certain conventional capabilities to respond to LIC in the Third World, funding for modernization of nuclear forces is essential since a robust nuclear capability is indispensable for U.S. defense strategy.

BELL'S TERMINATING WORK AMPLIFICATION

Senator SPECTER. Because of the limited time, I only want to explore one more subject with you because there are many of my colleagues waiting, and that is an amplification of what you and I talked about informally earlier about Bell's terminating work because they are out of money on their annual appropriation.

I am very much concerned about seeing that happen because that may really set the program back tremendously, and I think that we ought to explore the possibility of maintaining at least enough effort to keep Bell in operation to maintain the status quo while this matter is evaluated by the Congress.

This is not some peripheral issue where the Congress is likely to accede to the Department of Defense. I think it is probable that the Congress is going to disagree with this item. That is only one Senator's opinion, but very much like maintaining the status quo in litigation where we get temporary restraining orders to maintain the status quo.

There is a high likelihood of irreparable injury if Bell stops its work. I would like for you to say what you and I were talking about before as to what might be done to keep Bell in operation so that this project is not prejudiced in the interim by a work stoppage.

Mr. ATWOOD. Let me first of all say I think your request for added information and an analysis of what we went through is very much in order and we will get that to you promptly.

Senator SPECTER. Thank you.

Mr. ATWOOD. As far as the contract with Bell is concerned, they have a fiscal year funding. Their present contract has a ceiling on it, which means if they exceed that ceiling, they will be spending their own money. It is my understanding that they have exceeded that ceiling and therefore, although all of the money for this fiscal year has been appropriated, they are faced with the choice of either stopping work and therefore breaking the contract, or continuing at their own expense between now and the end of September of this year.

They have indicated that they would be doing that as soon as May 5 or 6. We have been evaluating several alternatives. Obviously, we would encourage them to continue and not break the contract, but I understand their position DOD has said that the program will be cancelled and therefore there is some concern on their part whether they are just putting good money after bad in spending their own money on the program through the remainder of this fiscal year.

The alternatives that we are looking at include continuing the program through some sensible flight test program to gather all of the technical information that would be associated with that program, considering all the money that we have spent to date. That would be one option.

A second option would be a very minimal effort to go through a technology demonstration.

We hope to have a decision within a matter of a day or so on that. The problem that we face within DOD is that we have a contractor who is fully funded for a contract through the fiscal year.

We have announced that after this we propose that the program be cancelled. We would have to go back and seek authority from Congress to reprogram money into that, having decided to cancel it.

But that is the status of it today.

IMPORTANCE OF V-22

Senator SPECTER. Well, I very much appreciate your comments. When you say that DOD would hope that Bell would continue and not break the contract, of course that is an implicit recognition by DOD of the importance of the V-22 and perhaps at least suggests a little ambivalence on DOD or perhaps a recognition that there may be a different congressional view, because obviously if you want Bell not to break the contract you have an interest in the program.

When you talk about continuing through flight test or a minimal effort for technology demonstration, those sound like reasonable alternatives, and when you talk about reprogramming it would be my sense—again speaking only for myself—that this subcommittee and the Appropriations Committee would look favorably upon that to maintain the status quo so that if my speculation or my judgment is correct that it is going to be continued we not lose significant ground but maintain the status quo.

So I would appreciate your informing me what you decide on that, and I stand ready, willing, and able to assist you, and I think the subcommittee will as well.

Thank you very much, Mr. Secretary. Thank you, Mr. Chairman.

Senator INOUYE. Thank you. Senator Bumpers.

UNILATERAL CUTS

Senator BUMPERS. Mr. Secretary, on page 1 of your statement you say: "We cannot afford to react unilaterally to political rhetoric and proposals that have not yet been fully implemented." Then you follow that up with the statement that "it certainly would not be in the best interests of the United States and allied security to respond to Soviet reductions with further unilateral cuts of our own that would result in preserving their conventional superiority."

Who is suggesting that we do otherwise?

Mr. ATWOOD. I do not know that anyone has suggested that. I am just making a statement of our position on it.

Senator BUMPERS. I must tell you, Mr. Secretary, I do not know of anything that offends me like some speaker getting up and saying I am not ashamed to be an American. I always want to say, who are you addressing that to? Who is ashamed to be an American?

In this particular case, nobody is suggesting that we unilaterally disarm or that we be incautious or that we be naive. But the chairman of the Armed Services Committee yesterday said to the Secretary and Admiral Crowe, what is wrong with negotiating? If we are not strong enough and confident enough to sit down at the negotiating table with the Soviet Union after spending $2 trillion over the last 8 years, when will we be?

Do you agree with the chairman of the Armed Services Committee yesterday when he says we ought to negotiate with the Soviet Union on short-range missiles?

Mr. ATWOOD. Let me go back to your original question. There has been much talk, particularly in Europe, about negotiations. There has been much talk and great sympathy among the Europeans as to Gorbachev's position and a feeling that his words are sufficient for us to consider disarming.

Now as far as talking about a negotiation on the short-range nuclear forces, for example, the great pressure there seems to be stemming from a political situation which exists in Germany. Of course, if we are going to be pressured into negotiations at a time when it is not called for by a political situation in Germany. I think we need to rethink everything.

APPROVAL RATING

Senator BUMPERS. Mr. Secretary, 2 weeks ago there was a poll in Great Britain, Maggie Thatcher's Great Britain, that showed that Gorbachev has twice as high an approval rating there as George Bush. Now, she is the one who is backing us and saying to the Germans that we are not going to negotiate with the Soviet Union on modernization or zero option or somewhere in-between.

How do you account for that? Does that disturb you, the fact that in Great Britain even Gorbachev has twice as high an approval rating as George Bush?

Mr. ATWOOD. Well, obviously it disturbs me, as it should disturb all of us, that our own President is not as highly thought of in a country that we have been so closely allied to over the years. On the other hand, I think Mr. Gorbachev has been such a breath of fresh air compared to previous leaders in the Soviet Union that it is naturally appealing to people.

He is certainly saying things which would give hope and encouragement. So although it does bother me, No. 1, from the standpoint that I do not like to see the leader of the American people thought less of than anyone else, I am not particularly surprised from the standpoint that if you look at Mr. Gorbachev and compare him to previous leaders in the Soviet Union he certainly is a breath of fresh air.

DEFENSE SPENDING

Senator BUMPERS. You see, one of the things that troubles me is we have been waiting for 70 years for the old Bolsheviks to die out or to get too old to rule. They do. We get this breath of fresh air which you mentioned, and all he is doing is what he has to do. He is not doing it to accommodate the United States. He is doing it because the economy of the Soviet Union is a basket case.

You know why you are here this morning talking about these cuts? Because in 1981 we started out at a totally unsustainable level of defense spending. I favored increased defense spending, but I did not favor a 50 percent increase in real terms over a 4-year period which could not possibly be sustained.

So now we find ourselves in this position. Gorbachev is making a virtue of necessity and we are not. And he is winning. He is winning the political war. I have always felt the linchpin of Soviet foreign policy was to drive a wedge between the United States and its NATO allies, and now we are helping him do it. He is not doing it for foreign policy reasons now. He is doing it out of necessity there.

It just seems to me that we are really—I mean, when there is a breath of fresh air in the world and there are opportunities to negotiate and give people a decent night's sleep it seems to me we are doing a lousy job of seizing that opportunity. It has nothing to do with being naive, negotiating from weakness, any of those things.

You would agree with me that the budget deficit is the No. 1 domestic problem in this country, would you not?

Mr. ATWOOD. Certainly one of the major problems.

Senator BUMPERS. I will bet when you were at General Motors you talked about it a lot.

Mr. ATWOOD. We tried not to have such a budget deficit at General Motors. [Laughter.]

BALANCING BUDGET

Senator BUMPERS. That is right. You know, some of us on my side of the aisle who were always considered the taxers and spenders are the fiscal conservatives around here these days. We really believe it is serious. Henry Kaufman, not known as a citadel of liberalism in this country, says defense spending has to go to 4 percent if we are really serious about balancing the budget, along with some other things.

But, Mr. Secretary, I do not mean to be accusatory. I know you are new in town. But I just disagree so strongly with what Secretary Cheney said the other day, and I agree with George Bush in chastising him about it.

On the second page of your statement you say, "the proposed Soviet reductions should be viewed as more than offset by reductions we have already made in the last 4 years." What are those?

Mr. ATWOOD. May I come back to your original premise for just a moment?

Senator BUMPERS. Absolutely.

Mr. ATWOOD. One of the things that is concerning to me, and I suspect concerning to you and everyone, is the fact that if you view the past 40 years or more since World War II, we are facing a situation which in almost every regard has been a complete success.

I think NATO's observation of its 40th anniversary has been a success, a long period of stability in this world. I do not think there is any question—and I use your own words—that free enterprise, capitalism have worked as marvelously as any economic society could ever hope for, and communism and socialism have failed and failed miserably.

We find ourselves in the enviable position of being at the head of the free world, of having a political and economic system which are the envy of the world over, including probably Mr. Gorbachev. Those of us who have tried to do business over the years with countries which have been, and I do not want to use enslaved meaning anything except within the orbit of the Soviet Union, have found they have lacked even the rudiments of doing business.

They hardly know what cost base is. It is an unbelievable situation to try to do business with some of the countries that are in the Soviet orbit. And I know. We have tried. It is just a recognition on his part, and I welcome him to join the world order that we preserve, the freedoms that we have, the economic stability that we have, and the way of life that we have led.

There is no way that I ever want to put myself in a position which would be opposed to that, and I hope you understand that too.

Senator **Bumpers**. I do, Mr. Secretary, and I agree totally with everything you have just said. I think Gorbachev also agrees with you.

Mr. **Atwood**. Yes, he does.

Senator **Bumpers**. He is saying to the whole world that this system has been an economic, political, and social disaster. I just see it as a breath of fresh air because if you read history, you read Barbara Tuchman's March of Folly and you will see the world is always in a state of chaos because sane voices are drowned out with that crap about I am not ashamed to be an American and that kind of stuff.

If this President really wants to be successful, if he wants to go down in the history books, he will seize an oportunity which is extremely rare in my lifetime. Sadat paid with his life for being a different kind of thinker.

So I was watching Peter Ustinov do a documentary on the Great Wall. He was in Beijing. It was just a documentary on China, and I looked at the Great Wall and I thought there is the SDI of 2,000 years ago.

I am not going to get deeply involved in Brilliant Pebbles here this morning or even the B-2 or the other questions I wish we had time for, Mr. Chairman. But, you know, all of a sudden we have several thoughts about what SDI is. We spend $17 billion on it and then all of a sudden out of a clear blue sky here comes Danny Quayle with Brilliant Pebbles. I do not know what it means. I intend to find out.

But do you expect the Soviet Union to agree to really significant reductions in strategic weapons if we persist in SDI and the broad interpretation of the ABM Treaty?

Mr. **Atwood**. I think they would agree, depending upon what they are doing. Of course, the intelligence reports would indicate their activities are fairly heavy in certain areas and Mr. Gorbachev maybe has admitted that they are doing many of the same things themselves.

In our position I would repeat that I can do nothing but hope for his great success over there because I agree with you. I think he believes just as we have said in what has happened. If he does and if he is successful in turning this ship around, then in fact we are all in for a very fine future, and I would urge and do urge that we participate to the fullest, within the limits of knowing what they are doing behind our backs, behind closed doors, that we participate fully in discussions with them.

However, I urge caution in view of many of the intelligence reports about things are not always what they seem or what he says they are.

Senator **Bumpers**. Well, I could not agree with you more on that, Mr. Secretary, except to say this. This constant we must be cautious thing, it seems to me like that is sort of a screen for saying we wish him ill, we hope he does not succeed. We also do not want to face realities on the deficit crisis in this country.

I think you would agree that our strength lies in more than just planes and tanks and guns. I have served in the military. I am for a strong defense. But I am telling you what that does is preclude a legitimate, sensible debate on how much is enough and what the mix ought to be. That really is where I get offended from time to time.

It is not at you personally. It is at some of the rhetoric that just stifles sensible debate in this country. I certainly wish you well and I hope our paths cross often in the future, as I am sure they will, Mr. Secretary.

Mr. **Atwood**. Thank you.

Senator **Bumpers**. Thank you, Mr. Chairman.

Senator **Inouye**. Thank you very much. Senator Rudman.

Senator **Rudman**. I will yield to the ranking member.

Senator **Inouye**. Senator Stevens.

Senator **Stevens**. Mr. Atwood, I am grateful to my colleague here from New Hampshire. I think he really just does not want to be in a position of failing to debate our friend from Arkansas. I am not going to take that on.

Senator **Bumpers**. You are among friends here, Mr. Secretary, as you can see.

V-22 CAPABILITY

Senator **Stevens**. Yes; Mr. Secretary, I, too, am concerned about the V-22, as you know, and I am concerned about the fact that the Department appears almost to be playing games with us because I think the Department knows how strongly the Congress as a whole feels about that and knows we are going to put it back in.

As far as I am concerned, there is no question about it. I do not intend to vote for a bill that does not have V-22 in it. I think it is new technology. It is one of the most marvelous things we have thought of so far if you look at it in the military point of view. We can deploy the V-22 on smaller vessels and assist the Marines on being able to hit the beaches from several different positions standing off from beaches at 200 miles.

It means so much to the Army that the Army testified here in this Committee that that was their No. 1 priority in terms of air capability. It means so much to the civilian branch of the Government that two FAA directors have indicated to us that that technology means more to the future of civilian aviation than anyone in the Department of Defense realizes, and I now concur with that judgment, that there are very few people over there that realize it.

But what bothers me is that you have asked for money in this same bill for H-53's. Did you give that the same consideration that you did V-22's? On what basis are we going to fund an improvement of existing technology if we cannot fund new technology?

Mr. **Atwood**. In a general sense, very often you would like to have all of the money necessary to make a major breakthough in a total system with new technology, but barring the availability of the money to afford a total system with a new technology you do continue to advance new technology in a subsystem level or at a much lower level.

It does not say that if you cannot afford a major weapons system that you do not continue to do research and development because in fact we do, with or without an application at the instant. So I have no problem in that.

I am concerned because I hope you understand that no one at the Department of Defense is in disarray about the value of the V-22. There is no question but what the V-22 was and is and has the potential for being a fine augmentation to our arsenal, and certainly the Marines have been outspoken in that regard.

I have not found—you perhaps are referring to one of the CINC's in the special ops or something from the Army as opposed to the total Army position.

Senator STEVENS. It was special forces.

Mr. ATWOOD. I thought it was; yes.

Senator STEVENS. They are our most important new forces.

Mr. ATWOOD. I did not mean to question you on it, but I wanted to make sure that it was not the total Army that was making that position.

BELL-BOEING CLOSE DOWN WORK

Senator STEVENS. Well, no use belaboring it. As I understand it, the Bell-Boeing team has notified the Department that unless the costs are covered for the rest of the year they will close down the work this Friday, tomorrow. If that work is stopped now, it means that we will restore that funding at an increased cost starting October 1.

I do not know about the rest of these people, but again I want to make sure everyone understands I am not going to support a Department of Defense bill this year that does not have the V-22 in it. I think it means more to our country than anyone realizes and it is new technology. I cannot believe that we would abandon $2.2 billion in this fashion, particularly before Congress has an opportunity to review the Department's judgment.

Second, I noted that the force structure reductions that are proposed in this budget are all stationed in the United States. Not one is from overseas. It includes one Army mechanized brigade from Fort Carson, Army attack helicopters and crews, seven P-3 ASW aircraft, two tactical fighter wings, 4,000 Army personnel associated with the elimination of Pershing II missiles. That is the only one that I can find.

Reductions include thinning out Air National Guard units, Air Force Reserve squadrons that have trained pilots and crews. First, let me ask you this. Did the Department really consider the cost-effectiveness of units that were reduced? When I look at these Air National Guard and Air Force Reserve units, it seems to me they are the most cost-effective units we have in our defense forces, and yet they are being cut out while redundant units in Europe are maintained.

Mr. **Atwood**. The Department did look at that and you did correct your original statement. There were about 4,000 forces coming out of Europe.

Senator **Stevens**. I think that was mandated by the Congress last year.

Mr. **Atwood**. That is the result of the reductions in the Pershings; that is correct.

As far as the addition of people to the Reserves or the removal of people from the Reserves, I think one of the problems that we have is the retention of people in the reserves is not as good as it is in the armed services. We have a little bit of a problem there in terms of holding them, and it is partly because they do not have the urgency of the situation that those in the armed forces do.

RETENTION IN AIR FORCE AND ARMY GUARD

Senator **Stevens**. Well, I was under the impression we were getting greater retention in the Air Force and the Army Guard. I would like for you to give us some figures to back up what you have just said.

Mr. **Atwood**. We will get some figures on it, but the problem is a difficulty in retention.

Senator **Stevens**. I mean compared to retention in the regular Air Force and regular Army.

Mr. **Atwood**. That is fairly good.

Senator **Stevens**. You are saying that the retention in the Guard, Air Force, and Army and the reserve is worse than in the standing forces?

Mr. **Atwood**. I might stand corrected, and let me get the data for you. But the impression I have is that the retention in the Guard, and in the Reserves is less satisfactory than it is in the active forces.

Senator **Stevens**. I am not going to persist. I would like to have that.

Mr. **Atwood**. I will get that for you and I will apologize if I am wrong.

[The information follows:]

Retention Rates

There are two elements that affect the retention rates in Active and Reserve components. One is the number of individuals who leave the service before the end of their obligation (unprogrammed losses). The other is the number of individuals who complete their obligation and do not reenlist (programmed losses).

The common measure of retention is the number of individuals that reach their reenlistment window, stated as a percentage of the population of any year group. Retention rates for the Active components are 30 percent and 25 percent for fiscal year 1987 and fiscal year 1988, and compare with approximately 23 percent in the same years for the Reserve components.

While retention rates are similar in the Active and Reserve components, they are not indicative of the differences in personnel policies.

The Active component personnel programs reflect ongoing requirements for full-time force structure needs, and includes the programmed release of a number of certain grades and specialties each year (programmed losses). By contrast the Reserve components strive to reduce all losses (programmed and unprogrammed) in order to maintain part time forces to meet congressionally mandated end strengths.

DEFENSE FUNDING

Senator **Stevens**. The figures I saw yesterday do not reflect what the Senator from Arkansas has just indicated. The figures indicated that there has been an overall 8 percent reduction by Congress. There has been a negative increase or negative funding each year for the last 3 years for defense and that this year at the budget level that has been agreed to, if it is finally approved by Congress, there would be a 0.8 or 0.9 percent real growth in defense.

Is that your understanding, at the $305 billion level?

Mr. **Atwood**. Gorbachev's proposal was a 14-percent reduction in defense spending, but we do not know the base for the future. The U.S. situation is it has been a 12-percent actual reduction in defense spending since 1985.

Senator **Stevens**. That was my understanding, that this budget before us now is——

Mr. **Atwood**. Negative real growth.

Senator **Stevens**. Well, it is negative real growth but it is 0.9 growth as opposed to last year's spending.

Mr. **Atwood**. Including inflation.

Senator **Stevens**. Is that right?

In other words, this budget before us——

Senator **Bumpers**. Senator, let me correct that. You are right. I misspoke myself a moment ago. There was a 50-something percent increase the first term, but there has actually been a decline of 11 percent. I said increase. I meant decrease.

Senator **Stevens**. Well, I just want to clear up that because I was looking at this budget as being an increase and yet I see some of the things that I very much want to see in the budget cut out. But my question was going to be what are the priorities of defense in this new Cheney budget?

Mr. **Atwood**. We believe the people programs, training, readiness of the people, and the sustainability are No. 1 priority above everything else.

No. 2, we want to sustain the production of those programs that are critical to the equipping of the forces that have proven technology and proven production.

No. 3, we want to undertake the continuing development of those programs only in the terms of the technology that needs to be proven. We do try to maintain economic production rates.

But the order of priority is, No. 1, people, and, No. 2, the readiness of the people in case of an emergency.

Senator **Stevens**. And is it a priority—well, I said that would be the last question. I will make this the last one.

Is it a priority of the Department that all of the forces overseas that are included in this budget be maintained overseas as opposed to some of them being maintained in the United States?

Mr. **Atwood**. It is not a priority per se. It is only in terms of fulfilling our obligations overseas and our obligations to our allies.

Senator **Stevens**. Thank you very much, Mr. Secretary.

Senator **Inouye**. Senator Rudman.

Senator **Rudman**. Thank you very much, Mr. Chairman.

V-22

Secretary Atwood, just several brief questions. I guess first a comment, since everyone else has talked about the V-22.

You have made your position very clear and obviously it was a very hard decision and not one that was made with much enthusiasm. I would just make the observation that as you look at the force structure, in spite of the fact that the Army several years ago under the leadership of then-Chief of Staff General Wickham started the creation of light divisions, we still are a heavy force on the conventional side.

There are many defense planners who do not believe we will ever fight World War II in Europe again. Although they still teach it at the various military colleges, it is still a war plan or war game.

There are many of us who believe here and in the military amongst planners that in the future U.S. forces will be used in what has been called, in I think a poor choice of words, nevertheless low intensity conflict. It is very low intensity except for the people who are there being shot at, of course.

If you are going to have a lot of low intensity conflict then you are going to need V-22's and lots of them because they can do the very kind of thing that you cannot do with helicopters in terms of speed and rapid deployment. So I just would make the observation that although I have no personal parochial interest in the V-22 as a member of this Committee I would support what Senator Stevens has said, and I think you ought to carry that message back. We had better find a way to maybe continue with it at some level.

In addition to that, although this is not a DOD concern, with the enormous trade imbalance that we have and with the premier position of the American aerospace industry in the world against our partners, such as Japan and so forth, it seems that that would be a prime export item for civilian aircraft in the coming years. So I hope that we find a way to do something to continue it.

I just really have a question on the numbers, and I understand that you have taken on the mantle, I guess, of the chief number cruncher, for which I am not congratulating you. I am really giving you my condolences. In DOD that is a tough job, but that is your job title.

Mr. ATWOOD. Cruncher or crunchee. I do not know which. [Laughter.]

Senator RUDMAN. Well, I think there will be a lot of both, Mr. Secretary. I think you are right.

But looking at your numbers and looking at your baselines, I have problems with looking from here to next year knowing what we all know here in terms of how difficult next year will be. And I will tell you why I say that.

You have got budget authority of $295.6 billion. That is fiscal year 1990 baseline. You have got the 1991 baseline of $311 billion. I am just talking budget authority. That constitutes growth of 2.3 percent after inflation, not the 1 percent real growth that we have generally been talking about.

My problem is that although I would agree with that as an individual Senator and I would think that unless something really remarkable happens in east-west relationships—and it probably will not in 1 year—that you are apt to find yourself in a position next year, based on this year's baseline, that is going to make next year's exercise even worse than this year's exercise and could cause some enormous dislocations amongst your suppliers and the forces.

So I would hope—and I ask you this for the record—if you would get back to this Committee because we like to be somewhat forward-looking, although we are accused of doing just the opposite, but I would very much like to see what you might come up with in terms of a slightly lower baseline for next year in terms of what that is going to mean in terms of what you are doing this year.

Because the two are inexorably linked, as I am sure you from your experience in industry know better than I.

Mr. Atwood. I would be happy to get back to you.

Senator Rudman. Could you do that on that subject because that is a real concern.

Mr. Atwood. We will get back, Senator.

[The information follows:]

Real Growth Freeze for Fiscal Year 1990

In February, President Bush proposed a one-year freeze in real growth for fiscal year 1990, a real increase of 1 percent for fiscal year 1991 and fiscal year 1992 and 2 percent real growth for fiscal year 1993 and fiscal year 1994. Since the budget summit agreement was only for fiscal year 1990, the fiscal year 1991–fiscal year 1994 levels included in the amended fiscal year 1990 budget were unchanged. The Department will continue to review the fiscal year 1991 budget for fact-of-life changes and changes that may result from the ongoing management and strategy reviews. Until any such changes are made or until the adjusted fiscal year 1991 budget is presented next year, the fiscal year 1991–fiscal year 1994 baseline will remain unchanged from the pre-summit level.

STRATEGIC STUDY

Senator Rudman. Other than that, I would say that—would it be fair to state that one of the problems that you have had in putting all of these priorities together is the fact that you have still do not have your service secretaries essentially in place to consult on this budget.

Mr. Atwood. Well, of course that has not been a great advantage to be without them, but I must tell you that the present service secretaries—Secretary Ball of the Navy and Secretary Marsh of the Army and Acting Secretary McGovern—were very active participants in all of this.

Senator Rudman. But of course your new strategic study or study of national policy is due soon and then there will have to be essentially a reordering of some of these priorities, I would assume.

Mr. Atwood. That would normally be a disadvantage if we were doing it in discrete steps. As I mentioned earlier, the normal procedure would be the national security strategy is established, the national defense strategy is established, then the defense guidance and then the budget is prepared.

Of course we have not been doing it in that order for many reasons. But, on the other hand, having said that, those doing the security and defense strategy study were active participants in the budget review so that we were taking advantage of what had been accomplished all along, and I would hope there is not a major reshuffling of emphasis.

Senator **Rudman**. Well, maybe what I might suggest is that in my prior question which you are going to get back to me on, rather than have it back in time for this hearing record to be complete I would prefer to have it later in the year, maybe as late as June or July, in terms of looking at this year's outlay, next year's outlay as planned here, and a what-if exercise if in fact it is a great deal less than that, which I frankly, looking at the numbers, think it is apt to be.

Because that is going to have a major effect on what we do, and we have gone through this in past years and it has been agonizing. It would be helpful to have that a little earlier.

Mr. **Atwood**. I will get back to you, Senator.

Senator **Rudman**. I want to say, Mr. Atwood, I am very impressed by your testimony this morning. It is nice to have a direct, forthright witness before the Committee from DOD, and we appreciate it.

Thank you.

PREPARED STATEMENT

Senator **Inouye**. Thank you. Senator D'Amato.

Senator **D'Amato**. I have an opening statement that I would like to put in the record at this point.

Senator **Inouye**. Without objection.

[The statement follows:]

Statement of Senator Alfonse D'Amato

Thank you, Mr. Chairman. I am indeed glad that the Deputy Secretary of Defense, Mr. Atwood, is with us today to discuss the administration's amendments to the Reagan defense budget.

These are difficult times, budgetarily, and difficult decisions will have to be made. By constraining ourselves to an inviolable spending ceiling, we in the Congress have forced ourselves to precisely prioritize the needs of the Nation. The danger in this situation is that the prioritizing may not always be done by consensus, but occasionally may occur through the wielding of the political might of a few.

Therefore, it behooves us not to neglect the fundamental needs of the Nation, of which defense is one. For if we weaken our ability to defend ourselves, we jeopardize all the dimensions of the lives of our citizens. Our foreign policy, international economy, and freedom to act as a Nation is limited to the extent we feel that other nations can exert their will upon us through the threat of violence.

As you point out in your statement, Mr. Atwood, many people forget that this country has had five years of decline of its defense budget in real terms. We have cut the fat from the military budget long ago. Now, we must face the prospect of trimming muscle and bone.

I believe the imperative we must follow is not to take any irreversible courses of action. This applies not only to cost cutting but also arms control. President Gorbachev entices us to lay down our weapons with his promises of unilateral disarmament. Many experts note that the force withdrawals he touts are reversible in time of crisis or not all that important to his fighting capability in the first place.

I find that several of the changes requested in this defense budget amendment involve irreversible actions and that bothers me. One of these is the zeroing of new production funds for the F-14D Tomcat. This move simply does not make sense. The Navy will have no other choice in meeting its future requirements for long-range carrier air power than to wait for the Navy version of the Air Force's advanced tactical fighter (N-ATF).

I hope the N-ATF program meets its schedule and interservice commonality goals, but the track record of past efforts of this kind certainly makes me want a ready fall-back option should it fail. Production of the F-14D would provide the breathing room the Navy needs.

Mr. Chairman, I look forward to questioning our witness on this and several other actions that I am concerned about. Thank you.

F-14 PRODUCTION

Senator D'AMATO. Thank you very much, Mr. Chairman.

Mr Secretary, I am not going to ask a question as it relates to the F-16, but I will suggest to you for more than just a parochial interest—it would be silly to suggest I do not have an interest as it relates to what the impact of the termination of that program will have on Grumman.

Mr. ATWOOD. Do you mean the F-14, sir?

Senator D'AMATO. The F-14, excuse me, on Grumman and its employees. But I am also concerned about the fact that we are putting all of our eggs, it seems to me, as it relates to the future irreversibly as it relates to the Navy's advanced tactical fighter.

I hope that we do not have the kind of debacle that we had with the TFX program and this will not be the TFX of the 1990's and leave us with a situation where we do not have adequate as it relates to defending the fleet.

It is my estimation that we have some tough choices to make. I understand that. I also have a feeling that Grumman is the small, relatively small, defense manufacturer who is being viewed as expendable. I say that as it relates to the decision they are not even in the competition. I think that the boys over at the Pentagon have been churning away at this. I think Grumman has a measure of responsibility certainly as it relates to being advocates for their planes that they have produced, and good ones, fine ones, great quality, on budget.

They could have done more. They certainly were outgunned and outmanned by the lobbiests and by the other competitors. But I am very much concerned about that. There is going to be, obviously, an attempt made to revisit that question.

I would hope, Mr. Secretary, notwithstanding that this is the recommendation of Secretary Cheney, that you might in the solitude or at least in the confines if not a public forum take a look and review this area, because this will heat up. There is no doubt in my mind.

I am concerned as we diminish the productive capacity we leave only the two or three giants left in the area and the cost to the American taxpayer when we begin to eliminate competition could be considerable. I do not believe, for example, that the NATF we are talking about $40 million a copy. Well, with the technology that they are talking about, I do not believe it. That is nonsense.

Maybe we could double that and add 50 percent. I mean, those are the numbers we are going to be talking about. We are not going to be talking about $40 million.

So on the one hand we have reduced the cost for this new technology and say we have got to move to it. On the other hand, we really recognize that in reality it will not come in. So I would hope you would take a look at that.

Mr. ATWOOD. I share with you the opinion that the F-14 is a fine airplane and has a fine record. I would also share with you that my own experience with the Grumman company is a wholesome one and that they have fine management and they are a fine company. I would be happy to take a look at it.

Senator D'AMATO. Thank you very much, Mr. Secretary.

Mr. Chairman, I have no further questions. I thank the Secretary for his response.

V-22 PAYMENTS

Senator **Inouye**. Coming back to the V-22 matter, Senator Stevens indicated that a decision has to be made by tomorrow on whether to authorize payments. What will that decision be?

Mr. **Atwood**. Let me state that the decision is being made by Bell-Boeing in which they in effect would abrogate the contract. They have a contract which goes through the end of this fiscal year, through September, and it is fully funded by the Department of Defense through that.

The fact is that they have expended at a rate far greater than the contract and the funding would normally envision, and that perhaps does indicate something about the program. But they have spent all of the money. The target money has been spent and to continue on by contract they will be spending their own money and therein lies the problem.

Under normal circumstances you do not consider it a Department of Defense problem. They have the contract. They are under contract to DOD, and they have that money problem.

Senator **Stevens**. Would you yield right there?

Senator **Inouye**. Fine, sir.

Senator **Stevens**. Mr. Atwood, my understanding was as yours, that they have advanced funds but that the Department has made so many changes in the V-22, has added weight to it, despite the fact that the original one did fly successfully, that the modifications have been such that unless there is additional funding they would be spending their own money at the rate of about $1 million a day in order to continue that program until the end of the fiscal year, and that that would not be wise in view of the Department's decision that no further funding would be forthcoming with approval of the Department.

Now have you people—if I may, Mr. Chairman—have you people negotiated with them to see if that is true?

Mr. **Atwood**. I know of no proposal in here for added funds this year for anything. We are funding them on the contract and we have funded them up to the ceiling of the contract.

Senator **Stevens**. But the Department, prior to you and Mr. Cheney coming on board, had sent requests for modifications which it must have known would cost money.

Mr. **Atwood**. Did they cost them, do you know?

Senator **Stevens**. I have seen the costing. It indicates what you say, that they will be out of money tomorrow.

Mr. **Atwood**. Yes. But I do not know of any——

Senator **Stevens**. That is because of modifications, not what we funded last year but the changes the Department has asked for since we funded it last year.

Mr. **Atwood**. It may be that DOD has made changes and that they have proposed cost data on that and that it would be expended this year, but if that is the case it has not been brought to my attention.

Senator **Inouye**. Mr. Secretary, if we were to continue the V-22 program, how much more would we need in research money?

Mr. **Atwood**. I am sorry?

Senator **Inouye**. In research, how much more would we need?

Mr. **Atwood**. For the V-22?

Senator **Inouye**. Yes.

Mr. **Atwood**. In order to complete this fiscal year, through September, we would need about $125 million or $130 million to keep them fully going at the rate they are spending now. Therefore, to go through this fiscal year it would take about $125 million or thereabouts.

Senator **Inouye**. How much more would we need beyond that to complete the research cycle?

Mr. **Atwood**. I do not have that figure at my fingertips. Perhaps I can get that. There is a shadow in back of me to give me this information. About $500 million through 1992. That is an approximate figure.

Senator **Inouye**. You are not willing to request that amount?

Mr. **Atwood**. I think the question that needs to be asked is not whether we are willing to put $500 million in to complete that. The question that really needs to be asked is, if we are going to cancel it, why should we put any more money into it?

As I mentioned earlier, there are only two phases. If we are going to cancel the program, which we have proposed, then with the money that has been invested there are two alternatives that we are considering. One is to complete this program or, alternatively, to get flight test data and perhaps not to the full amount that is mentioned here but to get flight test data which we have not had yet.

The other alternative would be to continue it just through a technology demonstration phase. Those are the two lesser alternatives. We are just now evaluating that.

Senator **Inouye**. I assume that the service chiefs have approved this termination.

Mr. **Atwood**. Yes, sir.

NATIONAL AEROSPACE PLANE CANCELLATION

Senator **Inouye**. I would like to now ask a question on the national aerospace plane cancellation. I am certain you are aware that this program is very dear to some of our members on this subcommittee and strongly supported by very important members.

What were the military effectiveness and cost effectiveness reasons for this decision?

Mr. **Atwood**. I do not know that there were cost effectiveness reasons. The report that we evaluated from the Air Force in particular indicated that they felt that there were very limited technology benefits from a DOD standpoint, and the recommendation was that this program be transferred fully to NASA.

I would support the continuation in NASA as a person and not in the Air Force because if NASA has any function at all in this regard it would be to foster new technology developments in this advanced plane. But it did not fall within the prerogative of the Air Force.

Senator INOUYE. Yet you are spending about $6 billion in the next 5 years to assure your access to space through development and procurement of expendable rocket boosters and additional launch facilities. What is NASP's priority compared to these programs?

Mr. ATWOOD. Well, as far as DOD is concerned, the priority is for NASA and not for DOD.

HIRING AND RETAINING CIVILIANS IN MILITARY HOSPITALS

Senator INOUYE. I am certain the Senator from Utah will want a few more hours of debate on this matter and the record will be kept open for the Senator to submit his questions.

Mr. Secretary, on a matter of people, as you have said, military hospitals are having difficulty in hiring and retaining civilians in certain health care occupations—clinical nurses, nurse-anesthetists, physician's assistants, just to name three of them.

One reason appears to be the inability of the services to pay wages that are competitive with the civilian community in which the hospital is located. Do you believe it would be beneficial for the Department to adjust wage rates for health care occupations that are in short supply, perhaps regionally or locally, so that the Department could compete effectively for quality personnel?

For example, I believe the VA already has the authority to adjust wages for VA hospitals. What do you think about that proposal?

Mr. ATWOOD. I have not seen a detailed study of the order of magnitude of what it would take to encourage people to come in or to retain them. But in general terms I would support such an activity. I think that we cannot afford to have anything less than the best in terms of our medical people, be they doctors, surgeons, or nurses.

If a study indicated some level that we could understand, then I would favorably support that.

Senator INOUYE. We received testimony not too long ago from nurse personnel advising us of this very critical situation and I would hope that you can look into this matter and provide us with a followup response to this.

Mr. ATWOOD. We will do that.

FORCE STRUCTURE DECISIONS

Senator INOUYE. This I believe is also a very basic question, Mr. Secretary. Many of your force structure decisions strip unit equipment and manning from combat units but on paper overall force structure remains the same. For example, the budget proposes to eliminate an Army brigade and downsize the attack helicopter units, but the Army continues to officially maintain 18 divisions. There is no change in that.

The Air National Guard squadrons are being reduced from 24 to 18 aircraft for each of the squadrons, but the number of squadrons will remain the same. You can find this in other areas such as battle groups.

Why has the Department chosen to reduce a crew here, an aircraft there, rather than eliminating a full squadron and keeping the remaining units at their war-required size?

Mr. ATWOOD. I think it would be in order for me to spend just a moment and go through the cycle that we did so -that there is no misconception that it was just Secretary Cheney or myself who made these changes.

When we went through the budget exercise, both the prebudget exercise before the agreement and the budget exercise which we went into after the congressional and executive branch agreement, the military was brought in and was given some hard choices about how to handle that.

In particular you mentioned the helicopter programs, and the Army chose, in view of everything, that they would give up things in order to continue the more advanced LHX helicopter. Many of these choices were directly made and recommended by the service chiefs and by the secretaries of the services and concurred in by the Secretary of Defense.

Senator INOUYE. Has the Department proposed a reduction in the number of flag officers along with these cuts in end strength and force structure?

Mr. ATWOOD. No; but there might be pressure in the opposite direction from various places.

CUTS IN EUROPE

Senator INOUYE. You are cutting down 4,000 in Europe and twice that number this side.

Mr. ATWOOD. Yes.

Senator INOUYE. But no cuts in flag officers?

Mr. ATWOOD. At this time, no. Now you should understand—I am sure you do—that there is a feeling that a study which was made within the last 2 years indicated that there was—there should be a larger number made available and that they are living within a much smaller number that was never authorized.

Senator INOUYE. At the present time DOD has approximately one million civilian employees to—I think we have one civilian employee to support two military personnel; that is the ratio, is it not? '

Mr. ATWOOD. That is correct. It is approximately that.

Senator INOUYE. One-to-two. Now we have eliminated 17,000 military, if we adopt your plan, but only 664 civilians. Now if this is the case, it should be 8,000 civilians.

Mr. ATWOOD. If that is the question, let me say that part of the management study that we are doing now is to reduce these tasks which are duplicative or have no added value. We hope, as a result of this, to institute some fairly significant changes which will in fact reduce those tasks and eliminate those that are unnecessary.

The net result is that we would be able to get along with far fewer people. Unfortunately, it will be construed that the objective is to get along with fewer people. The objective is to do away with unnecessary work and a reduction in the number of people involved is a byproduct of that objective.

MX RAIL GARRISON AND SMALL ICBM

Senator INOUYE. This morning Senator Stevens brought up the matter of the V-22, which will be a contentious matter before us. There will be other matters that will be a focal point for debates. One will be your suggestion about the MX rail garrison and the small ICBM. I will submit a series of questions in this area and, because of its technical nature, I hope you can give it serious thought and provide us with your responses.

Mr. ATWOOD. I will do just that.

Senator INOUYE. Also the other area will obviously be in the SDI area, and I would like to submit questions in that area.

Thank you very much. Senator Bumpers.

JAPANESE AIRCRAFT, FSX

Senator BUMPERS. Mr. Chairman, I will be very brief. Mr. Secretary, I take it you are comfortable with the President's FXD decision, building this Japanese aircraft with the Japanese?

Mr. ATWOOD. The FSX.

Senator BUMPERS. I am sorry, FSX.

Mr. ATWOOD. Yes, I am.

Senator BUMPERS. Well, I do not know where I am going to come down on that. I am inclined to agree with the President. I can tell you that the politics is on the other side of the issue, based on the mail I am receiving.

But I am going to keep my powder dry until I hear further on the debate as to whether we really are. I must say that the Toshiba sale of technology to the Soviet Union was unforgiveable and it developed a deep distrust in my mind about this. Now whether we are actually giving up any technology or this or not, I am sure we are going to be sharing some technology.

Whether or not the sharing of that technology could result in serious compromises militarily is one thing. Whether or not it would help Japan establish a domestic aircraft capacity is something else. I suspect they can do it with or without us. The fact that McDonnell-Douglas and Boeing both support the President's decision would indicate they do not seem very frightened by that prospect.

The other thing I want to say, Mr. Secretary, is that since I have been in the Senate, 14 years, I have voted for every military budget except one. Now, sometimes I have squealed like a pig under a gate about specific systems, and I did think, as I said earlier, Walter Lippman used to say the American people have never been able to sustain their enthusiasm for defense spending in peacetime.

There was a time when I thought he just had not met Ronald Reagan, but I think now that Walter Lippman is proving to be correct. People's enthusiasm for the very big increases has waned. With me it has not waned or waxed. I have always just thought that we ought to build the systems that fit into a force structure that made sense dealing with the threat.

My concern has been, as Frederick the Great said, it seems to me that we have been trying to be strong everywhere, and he said that is the best way in the world to wind up being weak everywhere. We just simply, in my opinion, have not assessed the threat with a great deal of specificity and tried to deal with that threat. Just in a macro way that has been my concern about what we have been spending.

On the V-22, I honestly do not know, Mr. Chairman, where I am going to come down on that. I am getting more flak. I was in Los Angeles the other night, and everybody converged on me there. It is not even built in Los Angeles. And I do not know. I think about the Iranian raid. The V-22 would have probably been a much better system to conduct that raid, for example, than the helicopters we used.

But I do not know whether the V-22 is really that much superior to helicopters or not, so I will wait and hear further on the debate, but I wish you would send somebody from the Pentagon that really knows that system over to me to give me the pros and cons of it. I would like to hear it.

Mr. Atwood. We will do that. And, as I indicated, was it Senator Rudman that asked that we provide him some detailed information. We will make that available to you also.

Senator Bumpers. Well, whatever. That is OK, whatever you can provide me that will help me make a decision.

Mr. Atwood. Could I make a comment on the FSX, even though you did not ask me a question?

Senator Bumpers. Yes.

Mr. Atwood. We have reviewed the FSX program considerably, and there were two major concerns in my mind when I first looked at it. One was are we giving up technology that we should not give up, that they do not have and that would cost them all outdoors to get anyway.

The way it is structured in giving up technology, particularly on the architecture and the software associated with the flight computer, I came down on the side that they really are buying that technology in a more sophisticated fashion when they buy a 747 or they buy a 767 or a DC-8 and therefore we are probably not giving up much that they could not get via a little more circuitous route themselves. So I eliminated that concern from my mind.

The other concern is are we sharing technology or are we getting any technology from them.

Senator Bumpers. I think that is an excellent point.

Mr. Atwood. The concern I had there, in particular I spoke to some people on composites, was the composite materials used on the wing. What we will get back—and I know this from personal experience in our own relationship with the Japanese in joint ventures in manufacturing programs—is a tremendous capability in manufacturing processing and manufacturing technology.

The Japanese have done an outstanding job using not the newest of technologies in manufacturing their products. They have a great insight into manufacturing processes and manufacturing technology, and to me that is the exchange that we will gather.

I will speak candidly about General Motors and our joint venture with Toyota. There were many of these same questions asked. Why would we form a joint venture in Fremont, CA? We said, and it proved out exactly right, that it is the technology capability, the manufacturing capability that was so rich for us.

I came down on the side of the FSX program based on those two facts.

Senator **Bumpers**. Well, that is an excellent statement, Mr. Secretary, very compelling.

Since I have been in the Senate I have resisted about four systems. I took the lead in trying to keep them from bringing the old battleships out. I did not think that made any economic sense. I have to confess to you that I would like to say I was a guru on that. I never foresaw what happened to the Iowa. I just thought it did not make any economic sense because of the men required to man the ship and the life span of the ship.

But let me ask you this question. If we do not ever find out with a great degree of sureness what happened there, what are we going to do with the battleships?

Mr. **Atwood**. Well, I concur. I understand the investigation, although I have not seen even an interim report on it and my news is probably not much better than yours, if at all, that they are making much more progress than they had thought they would in determining what went wrong.

First, they have determined that it is repairable, which is something that at first glance they did not think was a repairable situation.

But I concur with you. If we do not have a firm answer to what happened, what went wrong and, therefore, a corrective program to fix it, then we have to rethink it. There is no point in saying—and we have all been through that—every time a system has a random failure or has a failure we cannot understand we call it a random failure and we sort of gloss over it. We cannot afford a random failure of that kind, I will assure you.

Senator **Bumpers**. Well, the question maybe ultimately is, is it worth it to have that expensive a ship to man at sea just for the benefit of the HARPOON's and the cruise missiles aboard it.

Mr. **Atwood**. Well, that is what we have to evaluate.

OPPOSITION TO B-1

Senator **Bumpers**. Now the other two systems that I have opposed was the B-1, and I must confess there again I am glad I opposed it, but I did not oppose it for the reasons that now seem that I should have opposed it. I never dreamed the technical problems we were going to have with that. I did not think it was a good penetrating bomber.

We were building it as a penetrator. If we were going to build it as a conventional bomber, I might have supported it, but I did not think it would penetrate. It might, I do not know, someday.

But are we going to be asked for $2 billion here this year to fix the B-1?

Mr. **Atwood**. We are not asking for $2 billion to fix the B-1B. The fiscal year 1990-94 plan includes approximately $1.4 billion to complete the baseline B-1B configuration and add some new features or upgrades that were not anticipated in the original design. To complete the baseline, we have programmed $489 million in fiscal year 1990-94 for a new radar warning receiver and $250 million for deferred support equipment. Funding for these items is accountable under the congressionally imposed ceiling and does require a breach of the $20.5 billion—fiscal year 1981—cap by $380 million. In addition, we have programmed $687 million in fiscal year 1990–94 to upgrade, maintain, and improve the B–1B's combat effectiveness. These upgrades, which are not subject to the congressional ceiling, include new capabilities such as the advanced short-range attack missile [SRAM II], the global positioning system [GPS], and advanced ECM capabilities to defeat Soviet air defenses; as well as reliability and maintainability improvements.

Senator **Bumpers**. Oh, yes, the B–1. I am coming to the B–2.

The B–2 is one that I have enthusiastically supported but I must confess my enthusiasm is waning as the price of that plane has gone up and the technical problems have become manifest. I am really concerned, and I am concerned about not only the military application of that plane but the politics of it as the American people find out more and more about what that plane is going to cost.

I do not know where it is going to end. We are looking at $513 million to $520 million right now, per each, and we have had to slip the initial flight test and slip it and slip it. Obviously these are of great concern to people who just follow it in the newspapers, to say nothing of those of us who go up to S–407 and get these classified briefings from time to time.

Do you feel comfortably sure that the flight test of that plane is going to take place this year?

Mr. **Atwood**. I do not feel comfortably sure on the B–2 program until we see the studies which we have initiated completed. First, we are trying to evaluate what the status of the real cost of that program is going to be, and until we determine the technical status of it and review it, then I doubt that I could justify or verify to you that I sincerely believe those are the costs.

So before I make a statement on what I believe, I would like to see these studies that we have underway and Secretary Cheney and I are personally going to review every facet of those programs.

I might add something here in a way that I hope you will appreciate and I am sure you will. One of the problems that we have run into in our entire acquisition process is the fact that we set about a six-phase program. Phase zero is supposedly the concept phase, then phase one is demonstration and validation and phase two is full scale development and so on.

We set it up and we say at the end of every phase is a milestone and we must have accomplished certain things before we will go into the next phase. Unfortunately, if you look at a program that gets into trouble—one that is overrun or late or does not have the technical performance or does not have the reliability that we thought it was going to have—if you go back and look at it we will find that we went from phase zero to phase one without going through all of the wickets.

We went from phase one into phase two without having all of the criterion met. I have seen it. I have seen it in the industrial world and I see it here in DOD, and I think a prime requirement is that we set rigid milestone criteria and that we adhere to it. And we do not permit a program to go on.

All too often I hear, I know we should not do this, but, if we do not fund it and get along, the overall program will be late and it will cost more and so forth. Those are dead wrong decisions that we make.

Senator BUMPERS. You know, I think you and I are going to get along just fine. That is one of the most sensible statements I have ever heard from anybody from the Pentagon since I have been sitting in the U.S. Senate. I really do appreciate that very much.

Just one final thing, Mr. Chairman, and that is on the MX. That is the third system that I have opposed since I have been here. I have been for the B-2 and the Trident and the D-5 and all the other weapons systems.

And the MX, I opposed that because I thought the MX only made sense if it could be made mobile. And the MPS system, you know, people made fun of it. I was one of the people who thought the MPS system—multiple protective shelter system—was not a bad idea, but only in light of a treaty that limited the number of warheads the Soviets could have.

I mean, even that system did not make any sense unless you had a treaty limiting the number of warheads. But anyway I just thought it was plain stupid. So did John Tower. So did Sam Nunn, John Warner. Everybody else thought it was stupid until Ronald Reagan said he did not, and then everybody agreed that it was not. But to put those things in fixed silos never made any sense.

Now one of the things that you will grow much more sophisticated on as time goes on is this whole strategic weaponry thing and the mix. It seems to me that we are making a very serious mistake now in debating whether we are going to go with the MX rail garrison or the Midgetman or a combination of the two until we make up our minds what the START talks are likely to produce and what kind of a mix we want as a result of those talks.

If we are going to cut to 6,000 warheads, we need to know what kind of a mix we want to put those warheads on. If we are going to insist that the Soviets give up mobility, why build the rail-mobile garrison if we are going to trade it off for the SS-24, for example? Why don't we just say you give up the SS-24 and we will not build the rail-mobile, if that is what we want to do?

But it seems to me it sort of goes to your procurement question a while ago. We just go headlong into these things without thinking down the road as to where we are going.

Now, Secretary Baker is going to Moscow later this month and I am hoping he will get us off the dime and get the Soviets off the dime. We are going to start when, the last week of June, I guess. The START talks will resume, and it seems to me that we have already laid the basic groundwork of a 50-percent reduction, but what we have not confronted in this country is what kind of a mix we want once we do that.

Mr. ATWOOD. Correct.

Senator BUMPERS. That is just a statement for whatever you want to take it for.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Mr. Secretary, just to follow up on a couple of questions brought up by my colleague, Senator Bumpers. We do not have anything in this budget for the B-1, but you are planning to request about $500 million next time, are you not?

Mr. Atwood. There is some money being requested to upgrade some of the subsystems in it.

Senator Inouye. On the FSX, in your view if this agreement is rejected, can or will the Japanese proceed on their own to build this aircraft?

Mr. Atwood. Obviously I cannot judge whether they will or not. I can say this. They have the capability of doing it if they make it a national objective. One of the mistakes we sometimes make in terms of our technology is thinking that it is so prioritized that we have to keep it privileged. The simple truth is that we are grossly underestimating the capabilities of some of our allies, like the British, the French, the Germans, or, in this case, the Japanese, to develop it themselves.

They have that capability. Whether they would do it or not, I do not know. But if we go ahead with this program I believe it is a mutually beneficial program. I do not personally fear a joint venture with the Japanese. We had too many of them in my own experience that were quite satisfactory.

I know people have felt otherwise on given matters and I respect that.

CHRONOLOGY INVOLVED

Senator Inouye. On the matter of the chronology involved in this agreement, is it true that this matter became important in our agenda when the Japanese indicated that they were going to develop this aircraft and our Secretary stepped in and said how about getting together on it? Is that the chronology?

Mr. Atwood. You are predating my being at the Pentagon.

Senator Inouye. Someone is nodding in the back there.

Mr. Atwood. Someone is nodding in the back? One of the reporters? [Laughter.]

Yes; he says the Japanese initially indicated that.

SUBMIT B-2 STUDIES

Senator Inouye. Well, I thank you very much. As Senator Bumpers indicated, this has been a refreshing exercise. Before I call this hearing to an adjournment, may I further request that the B-2 studies be submitted for the record, if that can be done?

Mr. Atwood. Surely.

[The information follows:]

[Deleted.]

ADDITIONAL COMMITTEE QUESTIONS

Senator Inouye. I would like to thank you for sharing your thoughts with this committee, and since the President's State of the Union Address we have been waiting for the DOD budget revisions. Now that we have received it, I think we can now proceed.

As I noted earlier, we look forward to working with you for this fiscal year 1990 budget, and on all the issues in the future.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

DISPOSAL OF CHEMICAL WEAPONS

Question: Last year, the Congress provided funds for the Department of Defense to continue work of the demilitarization of aging stocks of unitary chemical munitions. Two technologies were funded, continuation of on-going incineration systems, and a new approach, cryofracture. DoD proposed termination of the cryofracture work earlier this year in a reprogramming, which was rejected by both the House and Senate Appropriations Committees.

- Mr. Secretary, the amended budget does not indicate how the Department intends to proceed with the chemical munitions disposal program. Do you intend to proceed according to the program proposed by the Army and funded by Congress last year?

Answer: Neither the original FY 1990/1991 budget nor the amendment contained funds for continuing the cryofracture program. We will follow the Army demilitarization program provided last year, except we will no longer pursue the cryofracture technology.

Question: The decision to terminate the cryofracture program was made at OSD, in spite of the Army's recommendation to continue the program. Can you look into this matter, and provide the Committee with your own assessment of how to proceed to destroy these chemical munitions?

Answer: The Defense Department is aware of the congressional interest in the cryofracture chemical demilitarization program. Given overall budgetary constraints, as well as uncertainties regarding schedules and the technologies involved, the Department, with the full agreement of the Army, determined last year that the cost of developing an alternative destruction technology (some $250 million) was not justified. The Army is confident, based on several years experience, that the disassembly and incineration technology is safe and will meet our requirements. We hired an independent review group, the National Research Council, to assess our entire demilitarization program. Their recently released report corroborates the Department's decision to terminate the cryofracture program.

Question: Secretary Atwood, the Administration's position on Defense funding for drug interdiction activities is unclear. President Bush announced that the Defense Budget would be amended to include $300 million in drug interdiction funding. The amended budget, however, contains no specific references to this funding. It does not identify procurement, personnel or operations funding, and the "Drug Interdiction, Defense," appropriation is still "zeroed out."

Answer: The Department is committed to the funding of a drug program of approximately $318 million in FY 1990 and $325 million in FY 1991. These amounts include the continuation of support that is incidental to training, i.e., flying hours and steaming days. In addition, the amounts include support to continue implementing the congressional direction to coordinate drug interdiction aerial and maritime surveillance, to establish a drug interdiction communications network, and to provide an enhanced level of National Guard use in the war on drugs. A program review is currently underway which will define specific drug program funding requirements by appropriation for FY 1990 and FY 1991. Until this review is completed, the amounts we will make available for procurement or operations is not known. However, as program specifics are identified, funding up to the amounts indicated will be realigned as necessary to finance the drug program.

Question: Mr. Secretary, the Department's drug interdiction proposal with respect to the Guard is difficult to understand. Is the Department proposing that the Army and Air National Guard fund drug interdiction activities from within existing funds?

Answer: At this point, no decision has been made on which accounts should be used to provide funding for drug program requirements. After the drug program requirements are determined, funding sources will be recommended which have the least impact on priority Defense programs.

B-2 PROGRAM

QUESTION: Mr. Secretary, Defense Secretary Cheney has been quoted as saying that there are a lot of technical problems with the B-2 bomber and that it is extremely expensive. On the other hand, the Air Force Chief of Staff, Gen Welch, has said the B-2 is a supert example of the inherent technological advantage of a free society,and that it combines ... long range, efficient cruise, heavy payload, all-altitude penetration capability, accurate delivery and reliability and maintainability. Without disclosing classified information, do you agree with the Defense Secretary or the Air Force Chief of Staff about the B-2? Are the problems with B-2 principally in costs or in technical areas, and do you have doubts about the aircraft's likely performance?

ANSWER: The two statements you have attributed to the Secretary and the Chief of Staff are not in conflict. The capabilities of the B-2, as espoused by the Air Force Chief of Staff, far exceed the capabilities of the flight-test-proven B-1B in its primary role as a strategic penetrating bomber. The B-2 will be expensive, but we continue to believe it is an investment in deterrence and, if required, war fighting capability this country can afford. The technical achievements in researching, developing, integrating, and manufacturing the stealth technologies resident in the B-2 have been significant. While it is true that the first flight of the B-2 won't occur until later spring/early summer, we continue to be encouraged by the B-2's technical performance. First flight checkout is progressing satisfactorily along an event-driven schedule. The checkout phase is the first time during development that all subsystems "play" together. Problems are not unexpected; the technical problems encountered to date are not atypical of those experienced by other aircraft during the initial flight checkout operation.

B-2 ADVANCED TECHOLOGY BOMBER COST AND PROGRAM ISSUES

QUESTION: General Welch says the B-2's costs per weapon. compared with other strategic weapons systems, is very good. Do you agree with this analysis, and on this basis, how does the B-2 compare with the MX/Rail Garrison, the Small ICBM, the B-1B bomber, and the TRIDENT II missile and submarine?

ANSWER: As Secretary Cheney has previously testified, we are currently reviewing the B-2 program cost estimate. Effectiveness comparisons between the B-2 and other the strategic weapons delivery systems cannot be done until completion of this review.

QUESTION: Your statement says that in rephasing the B-2 program, different program costs estimates have emerged and a special session of the Defense Acquisition Board will examine this issue. What are the major different costs estimates, and how do they compare with the $68.1 billion program cost and the $305 mission unit flyaway cost announced last December? What are the major reasons for the cost differences, and how much more would you expect the taxpayers really will have to pay for this program?

ANSWER: I cannot give you answers to these questions until the B-2 program cost estimate is established to our satisfaction. As promised by Secretary Cheney, a complete response to the question of B-2 costs will be provided by June.

QUESTION: At what program cost and unit flyaway cost does the B-2 program become unaffordable to the Defense Department. If that point is reached, will the Department consider killing the program or buying some operationally-useful number of aircraft less than the 132 aircraft in the current program?

ANSWER: These questions will be considered during the Defense Acquisition Board review of B-2 program costs.

V-22 OSPREY VERTICAL LIFT TRANSPORT AIRCRAFT CANCELLATION

QUESTION: Mr. Secretary, the only major program terminated in the FY 1990 budget amendment is the V-22 vertical lift transport aircraft, the Marine Corps's highest priority aviation program. The Pentagon decided it is less expensive to procure and improve existing transport helicopters to deploy Marines in amphibious operations and to meet Air Force and Navy needs.

What are the total program cost comparisons between continuing the V-22 program and pursuing the Pentagon's alternative? How many additional helicopters, and at what R&D and procurement unit costs, will be required to replace the 657 V-22's originally planned for the Marines, Navy and Air Force?

ANSWER: The cost comparisons used in reaching the decision to cancel the V-22 are shown in the following tables. The comparisons are for Marine Corps and Navy missions. All costs for FY 1989 and prior years are assumed to be sunk and are excluded from the comparison. The procurement costs shown in the "V-22 -- NTE & Dual Source" line assume that the pilot lot Not-To-Exceed (NTE) option is preserved and that all aircraft after that lot are procured under a dual source strategy (i.e. two production lines) at prices substantially below those in the pilot lot. The procurement costs shown in the "V-22 -- Adjusted NTE & Coproduction" line assume that the pilot lot NTE option is not preserved, that aircraft costs increase consistent with Bell/Boeing's latest NTE pilot lot proposal (34 percent higher), and that the aircraft are procured under a coproduction acquisition strategy. This alternative estimate is believed to be a more realistic estimate of the likely schedule and cost of the program than the dual-source estimate. On cost, it reflects the latest cost data possessed by the contractors. On schedule, it does not require fabricating the pilot lot aircraft with less than 12 months of flight testing, as the dual-source estimate requires.

The source of the O&S costs for all aircraft is the April 1986 V-22 Decision Coordinating Paper (DCP), prepared for the V-22 Milestone II decision. (The cost figures assume all manpower is active.)

The procurement costs for the CH-53, CH-60, and HH-60 were also taken from the V-22 DCP. A discount rate of 10 percent was used, in accordance with normal procedures. Undiscounted figures are shown in Table 2.

As can be seen from Table 1, when you consider the different timing of expenditures for the V-22 versus CH-53E/CH-60 options (which is the purpose of discounting), in all cases the CH-53E/CH-60 options are preferred. The procurement costs of the CH-53E/CH-60 options are substantially less than that of V-22, overwhelming any operating savings that the V-22 may produce.

Moreover, the operating costs in these tables use the actual costs of the CH-53E and Seahawk helicopters as against the projected cost of V-22 operations. Typically, operating cost estimates at the development stage of a program underestimate actual operating costs. For example, actual F-15 and F-16 operating costs are about 80 percent higher than those estimated at a comparable early state of those programs.

Even if the Department accepted projected V-22 operating costs and ignored the different timing of expenditures (thus using the undiscounted figures of Table 2), the CH-53E/CH-60 option is less costly, unless use of the CH-53 is limited to the so-called "single sling" option--i.e., it is never allowed to carry more than one High Mobility Multipurpose Wheeled Vehicle (HMMWV) at a time. (It is capable of carrying more than one, but it is argued that in some tactical/operational situations it should not--never allowing it to do so is an extreme case.) If indeed such an extreme single-sling limit were imposed, the Department would have to re-examine whether all of the approximately 350 HMMWVs involved were needed in the early stages of an amphibious operation, or whether some of the equipment carried by these HMMWVs could be put on lighter vehicles.

(Tables 1 and 2 follow:)

Table 1.
Comparison of V-22 Alternatives
(Discounted Constant FY 1988 Dollars in Millions)

Alternative	RDT&E	Proc	O&S a/	Total
V-22 (602 aircraft)				
-- NTE & Dual Source	382	9602	2045	12029
-- Adjusted NTE & Coproduction	382	11299	2044	13725
Terminate V-22/Buy Alternative Aircraft Mix - Single Sling				
- CH-53E (376 aircraft)	-	3506 b/	2150	
- CH-60/HH-60 (590 aircraft)	143	3132	1489	
- Total	143	6638	3639	10420
Terminate V-22/Buy Alternative Aircraft Mix - Double Sling				
- CH-53E (225 aircraft)	-	2694 b/	1506	
- CH-60/HH-60 (478 aircraft)	143	2775	1297	
- Total	143	5469	2803	8415

a/ O&S Costs include phase in costs and 20 year steady state costs.

b/_During the budget adjustment deliberation, an extra $216M (discounted constant FY 88 $) was added to the CH-53E (FY 90-94) to achieve more robust support and spares funding. The adjusted totals for the single sling option and the double sling option should be $10,636M and $8,631M, respectively.

Table 2.
Comparison of V-22 Alternatives
(FY 1988 Constant Dollars in Millions)

Alternative	RDT&E	Proc	O&S a/	Total
V-22 (602 aircraft)				
-- NTE & Dual Source	428	16185	10502	27115
-- Adjusted NTE & Coproduction	428	18975	10500	30803
Terminate V-22/Buy Alternative Aircraft Mix - Single Sling				
- CH-53E (376 aircraft)	-	6998 b/	11187	
- CH-60/HH-60 (590 aircraft)	167	7192	8588	
- Total	167	14190	19775	34132
Terminate V-22/Buy Alternative Aircraft Mix - Double Sling				
- CH-53E (225 aircraft)	-	4188 b/	6207	
- CH-60/HH-60 (478 aircraft)	167	5827	7025	
- Total	167	10015	13232	23414

a/ O&S Costs include phase in costs and 20 year steady state costs.

b/ During the budget adjustment deliberations, an extra $257M (constant FY 88 $) was added to the CH-53E (FY 90-94) to achieve more robust support and spares funding. This amount is not reflected in the cost shown here. The adjusted totals for the single sling and the double sling options should be $34,389M and $23,671M, respectively.

V-22 OSPREY VERTICAL LIFT TRANSPORT AIRCRAFT CANCELLATION

QUESTION: What are the specific costs and benefits in terms of military effectiveness of killing the V-22 and pursuing DoD's alternative program?

ANSWER: As the Chairman of the Joint Chiefs of Staff has pointed out, the V-22 OSPREY's increased capabilities are primarily useful in a narrow mission area. Those missions can be performed - though with some degradation - by helicopters or other existing capabilities. The major benefit of pursuing the program we have proposed is that we have been able to continue funding other programs that have application over a broader range of defense missions and to avoid even further manpower and force structure cuts.

QUESTION: The V-22 program has encountered major technical difficulties and has fallen significantly behind schedule. What technical and schedule concerns does DoD have about the program at this time, and did these concerns form part of the basis for its decision? Why does DoD believe that the improvements to existing helicopters will not encounter cost, schedule, and technical problems.?

ANSWER: The V-22 program is currently about 10 months behind the schedule originally projected. The V-22 aircraft empty weight continues to grow. It was forecast that at the end of FSD the aircraft would exceed the empty weight specification by 1920 lbs. A weight reduction program had been established by the Navy and contractor to address the problem. The slippage and weight problems, although noted, were not a major factor in my decision. To date the V-22 has only been tested for a very limited time in a very restricted helicopter mode and we do not know if there will be further schedule or technical problems.

We do not expect to encounter cost, schedule, or technical problems with modification of the existing helicopters because we are dealing with mature technologies with which we have a significant amount of experience. The most extensive modification will be marinization of the H-60 to the CH-60 configuration. We beleve that the major difficulties in this area have already been addressed as part of the SH-60 Seahawk program.

RELATIONSHIP TO UNDER SECRETARY OF DEFENSE FOR ACQUISITION

Question: Mr. Atwood, in your confirmation hearing before the Senate Armed Services Committee, I believe you stated that the Secretary of Defense intends to delegate the responsibility for DoD acquisition to your office. You further indicated that the Under Secretary of Defense for Acquisition would be under your direct line of supervision. Is this a correct interpretation of your testimony and is this the current intention of the Secretary of Defense?

Answer: As directed by the Secretary of Defense, I will assist the Secretary in the management of the

Department and will exercise the full power and authority of the Secretary on any matters for which the Secretary is authorized to act. In regard to acquisition, the Under Secretary of Defense for Acquisition is subject only to the authority, direction, and control of the Secretary of Defense. If I am to exercise any authority regarding acquisition, it would be done only in the capacity of acting for the Secretary under a delegation of the Secretary's authority.

Question: In your confirmation hearing testimony, you asked for time to review the Presidentially directed "Study of Management Practices and Procedures Within the Department of Defense" before formulating your response to questions on the roles and relationships of the Under Secretary of Defense for Acquisition (USD(A)). Have you had an opportunity to see the results of this management review? Have you formulated any opinions on the acquisition process?

Answer: The President has extended the date for completion of the Defense Management Review to May 24. Until the report is approved by the President, I cannot comment on its content.

Question: For the record, Mr. Atwood, in light of recent legislative changes, what do you see as the relative roles and substantive responsibilities of the Deputy Secretary of Defense and the Under Secretary of Defense for Acquisition with respect to the relationship of each to: (1) Secretary of Defense, (2) Service Secretaries, and (3) Service Acquisition Executives?

Answer: The following letter to Senator Nunn is inserted in response to this question:

LETTER FROM DONALD J. ATWOOD

April 10, 1989

The Honorable Sam Nunn
Chairman
Committee on Armed Services
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

During last Wednesday's hearing on my nomination to be Deputy Secretary of Defense, I was asked to expand upon my written response to your pre-hearing Question 9, regarding the relationships among the Under Secretary of Defense for Acquisition (USD(A)), the Deputy Secretary of Defense, the Service Secretaries and the Service Acquisition Executives.

The legislative history of the statute that created the USD(A) position, and the subsequent hearings conducted by the Senate Armed Services Committee relating to the Department's implementation of the statute, provide clear statements of Congressional intent on the relationship between the USD(A) and the other Departmental officials identified in Question 9. The USD(A) is responsible for the supervision and direction of the Department's acquisition system, subject to the Secretary's authority, direction, and control. He is responsible for the formulation of policy regarding the full range of matters encompassed within the Departrment's acquisition system. It is expected that his policy decisions will be implemented by the Secretaries of the Military Departments and their Service Acquisition Executives.

It is clear to me from the Senate Report accompanying the legislation that created the USD(A) position (Senate Report 100-331) that, since the USD(A) will be held accountable for supervising the entire acquisition system, it is essential that he be empowered to enforce compliance with Defense-wide policies. In this regard, in the exceptional case where it may become necessary for the Under Secretary to issue a direction in an individual case, he has that power as provided by law. The Under Secretary will normally participate in or make programmatic decisions at relatively major programmatic decision points. To the extent that these decisions may differ with the wishes of a Service Secretary or a Service Acquisition Executive, the statute makes clear that the decisions of the Under Secretary will prevail in his area of responsibility. I believe that the DOD Directive specifying the responsibilities, functions, relationships, and authorities of the USD(A), revised following the Senate Armed Services Committee's September 22, 1987 hearing, seeks to embody this understanding.

With respect to the relationship between the Deputy Secretary and the USD(A), the law is clear that the USD(A) is subject only to the authority, direction, and control of the Secretary of Defense. If the Deputy Secretary of Defense is to exercise supervision or exercise approval authority regarding acquisition policies, directives, or other decisions of the USD(A), it would be done only in the capacity of acting for the Secretary under a delegation of the Secretary's authority.

The foregoing captures my understanding regarding the intent of the Congress regarding the relationships among the USD(A), and the Deputy Secretary of Defense, the Secretaries of the Military Departments, and the Service Acquisition Executives.

Sincerely,

Donald J. Atwood

Donald J. Atwood

"Foley" Amendment -- Current Year Outlays

Question. The House Majority Leader, Congressman Foley, recently proposed to cut Defense by $1.7 billion in budget authority and over $1 billion in outlays to help finance the proposed 1989 Supplemental.

What would by the impact on Defense, if the Foley amendment were enacted?

Answer. Because there is very little flexibility this late in the fiscal year, the reductions could come only out of certain accounts. Therefore, the reduction would fall most severely on personnel ($448 million), O&M accounts ($490 million), and research and development ($214 million). We would be forced to freeze permanent change of station moves, stop payment of reenlistment bonuses, and release early some 28,000 people scheduled to leave the service between now and the end of the fiscal year. Army ground operating tempos and ship steaming and flying hours needed to maintain training proficiency would be reduced. The reduction in R&D would have to be taken in technology and research programs at the laboratories and universities and by curtailing planned testing of weapons systems. In addition, communications equipment, munitions, and special support equipment would be deleted, five to ten Military Construction projects would be eliminated, and planned maintenance of family housing units would have to be curtailed.

Question: Secretary Atwood, FY 1989 outlays from Defense spending appear to be $4 billion above projections. Last year, when the rate of expenditures was exceeding projections, your predecessor directed the services to reduce spending for travel, supplies, contracts, equipment and hiring in order to bring down spending. Are you considering similar action this year? Why are outlays over projections again?

Answer: The Department is not contemplating the use of any outlay controls in FY 1989 such as were imposed in FY 1988.

The two principal causes for FY 1989 outlays exceeding the budget summit agreement are (1) outlay controls imposed in FY 1988 and (2) the outlay effect of funds transferred from "slow" to "fast" spending accounts in FY 1989. The impact of outlay controls in the last quarter of FY 1988 delayed expenditures from FY 1988 causing them to "spillover" into FY 1989 resulting in higher outlays. In addition, the Department absorbed a number of high spending programs such as the additional 2.1 percent civilian pay increase approved by Congress (4.1% versus 2.0% financed), a substantial increase in foreign currency payments associated with unfavorable currency rates, increases for utilities, transportation and general support, and higher Military Personnel benefits approved by Congress in the FY 1989 Authorization Act. The effect of transferring funds from "slow" to "fast" spending accounts has an immediate impact on expenditures resulting in increased outlays in FY 1989.

QUESTION: Secretary Atwood, Congress is often told that our Defense forces and budget are built in response to our overseas defense commitments. Among the proposed FY 1990 force structure cuts are reductions in the number of deployable aircraft carriers, Army combat brigades, and tactical fighter wings. Significant cutbacks also are proposed in modernization and sustainability, such as quantities of Army Ammunition.

So let me ask, Mr. Secretary, what changes in strategy or overseas commitments accompany these force structure and program cuts? What will the Defense Department not be able to do in FY 1990, if we accept your proposals, that you are able to do now in 1989 when these forces are available?

ANSWER: While force structure and program cuts contained in the amended FY 90 budget request pose some significant difficulties for us, they have been selected and apportioned so that they do not by themselves necessitate any major changes in our current defense strategy and overseas commitments. The twin precepts of forward defense and strong mutual security alliances have been fundamental to US defense strategy throughout the post-World War II era. They have served the nation extremely well and should be altered only with the greatest care and deliberation. Against the dynamic nature of the present international security environment, the Administration is engaged in fashioning a defense strategy for the 1990s. We would not wish to have the relatively marginal FY 90 force structure modifications drive any fundamental decisions or long-term strategic choices. For example, the early retirement of CORAL SEA to coincide with the addition of ABRAHAM LINCOLN will maintain our number of aircraft carriers at the current level of 14. Though this is one carrier less than the previously planned increase to 15, we have determined, as Secretary Cheney has testified, that we can continue to maintain adequately our global commitments and presence with the current force level of 14 carriers.

STRATEGY AND OVERSEAS COMMITMENTS

Question: Does the reduction in the number of Navy ships, vis-à-vis other force structure cuts, signal a decision to emphasize our NATO commitment at the expense of other worldwide commitments?

Answer: Soviet conventional strategy will continue to focus on Western Europe, and the U.S. will balance that military focus through the NATO Alliance, as it has done for the past forty years. The basic principles of the maritime strategy, that a conventional war with the Soviet Union would be global and protracted, are intact; they are threatened by budgetary constraints, which for the navy, are translated into decreasing numbers of ships to represent U.S. interests globally. Future years likely will see an increase in the spectrum of naval missions and in the scope of geographic coverage. Our commitments remain unchanged; any minor changes in either force structure or specific military programs cannot be equated with a shift in our commitments. The U.S. remains dedicated to maintaining a global presence, in support of our world-wide commitments.

Question: Secretary Atwood, I have noted that on base closures the Department's position often seems somewhat schizophrenic--bases in the U.S. must be closed, but bases overseas must be kept at any cost. The Department's amended budget appears to make the same distinction for force structure.

In the United States the budget cuts:

1 Army mechanized brigade, Army attack helicopters and crews, 1 aircraft carrier, 73 P-3 anti-submarine aircraft and crews and aircraft from remaining P-3 squadrons, 7 destroyers, 2 Tactical Fighter Wings, and all hurricane reconnaissance aircraft available to protect the Gulf Coast, Southeast and Hawaii. Approximately 11,600 end strength.

Overseas the budget cuts:

4,000 end strength, or half the end strength associated with the deactivation of Pershing II missle sites.

Mr. Secretary, why are the force structure reductions not more balanced between the U.S. and overseas?

Answer: Budget cuts are not the sole determinants in the timing and nature of force reductions. The Department also considers the international environment, including the threat, alliance commitments , and U.S. global responsibilities before deciding where force cuts will be made. Although we have been encouraged by recent Soviet announcements calling for troop reductions, Warsaw Pact forces still pose a significant threat to Western security. The Pact capability will remain particularly menacing so long as the current imbalance in conventional forces persists. In the ongoing CFE negotiations, we are working with our NATO allies to develop proposals that will, hopefully, lead to reductions in conventional forces in Europe. In this context, I believe that reductions in U.S. forces overseas must take the CFE process into account. To do otherwise would raise concerns about U.S. commitments and could undermine CFE negotiations. Above all, we must maintain the capability to protect U.S. interests and those of our allies, and position our forces--both in the United States and overseas--so that they can best serve those interests.

Question: Mr. Secretary, some of these reductions, such as the cut of a Tactical Fighter Wing and the elimination of a mechanized brigade at Ft. Carson, are being proposed specifically to keep like-sized units stationed in NATO.

How long can this trend continue? How long does the budget have to go before the Department would propose deactivation of units overseas?

Answer: Force structure cuts are a major consideration during each budget process. However, they are only one of many major factors that are analyzed during that process. We place a high priority, for example, on personnel programs that will ensure quality forces.

Readiness and modernization of forces are also critical factors that must receive adequate consideration.

I do not believe that we can establish a direct linkage between the maintenance of an overseas unit, and the closing of a US installation. In addition, I do not believe that we can say that there is a set level in the budget that will necessitate deactivating forces overseas or units in the US. We must maintain adequate forces both in the CONUS and overseas to meet global commitments. Numerous domestic and international political and military factors must be taken into account during the formation of our defense strategy and budget. Among these are the NATO strategy of forward defense and flexible response, the threat, overseas/CONUS force mix, political commitments, and ongoing arms negotiations which impact our final decisions on where to take force structure reductions.

WAGE RATES FOR CIVILIAN MEDICAL PERSONNEL

Question: Mr. Secretary, military hosptials are having difficulty in hiring and retaining civilians in certain health care occupations, such as clinical nurses, nurse anesthetists, and physicians' assistants. One reason appears to be the inability of the services to pay wages that are competitive with the civilian community.

Do you believe it would be beneficial for the Department to adjust wage rates for health care occupations that are in short supply, perhaps regionally or locally, so that the Department could compete effectively for quality personnel?

Answer: The Department of Defense firmly believes that statutory authority to responsively adjust wage rates for certain civilian health care occupations would significantly increase the Department's ability to compete effectively for quality health care personnel. The Department is increasingly concerned about our civilian health care personnel shortages. Further, the Department believes current difficulties in the recruitment and retention of certain health care employees is directly related to the Department's inability to offer competitive salary rates commensurate to the civilian sector and other Federal agencies. For several years, the Department of Defense has strongly supported efforts to provide the Secretary of Defense with special pay authority equivalent to that provided to the Secretary of the Veterans Administration. Under title 38 U.S.C., Congress has granted the Veterans Administration with statutory pay authority that permits the requisite flexibility in tailoring compensation programs to national or local market conditions where there are problems with recruitment and retention of civilian health care professionals.

Congressional recognition of the need for the Department to have equivalent authority was demonstrated by language in the Fiscal Year 1988 Defense Appropriations Bill which contained language to allow the Department to waive Federal regulations concerning wage rates for authorized civilian employees in certain health care skills. The Department concluded, however, that there was insufficient authority provided to comply with Congressional intent as civilian salaries are established in law by title 5 U.S.C. rather than by regulation.

The House Appropriations Committee included in the Fiscal Year 1989 Defense Appropriations Bill the authority needed to waive wage rate restrictions for civilian health care personnel in high cost areas. However, the proposal was deleted from the Fiscal Year 1989 Defense Appropriations Bill as was another similar authority recently deleted from the Fiscal Year 1989 Urgent Supplemental Appropriations Bill.

The Department remains very concerned about the continued impairment of our ability to provide a competitive compensation system in comparison to both the civilian medical sector and other Federal Departments.

Question: Since the Department of Defense has had years of experience in adjusting federal wage rates for wage grade employees across the country, do you not believe it should be a relatively simple matter to set up a similar system for health care occupations in the Civil Service system?

Answer: While the Department of Defense believes it is feasible to develop a system for adjusting Civil Service pay among certain health care professionals in like manner to that currently provided for wage grade employees, significant differences between the two systems would likely make such a procedure difficult to effectively implement.

For example, the health care occupations with shortages are General Schedule with salary rates determined by nationwide comparibility surveys conducted by the Department of Labor and based on the recommendation of the President to Congress. On the other hand, Federal Wage System rates are established based on locality wage surveys of private industry. These surveys are conducted in accordance with Office of Personnel Management (OPM) policies and regulations.

The Department of Defense has worked closely with the OPM throughout the years in conducting wage surveys to determine federal wage rates for wage grade employees across the country. Certainly this comprehensive process has engendered experiences which would be of value if we were required to establish a similar system for health care occupations in the General Schedule system.

While there are similarities, significant differences in job classifications and categories would require that we use an alternative method. For example, an appropriate survey of health care occupations would legitimately need to consider the pay comparability figures for each geographic area, the size of the establishment surveyed, job matches, and determinations as to whether the established survey boundaries for the the Federal Wage Schedule surveys are appropriate for General Schedule pay surveys.

However, the biggest obstacle is that data is collected for the Federal Wage System from several different industries with substantially similar job requirements. A similar General Schedule survey of civilian health care occupations would of necessity be based on one "industry," i.e., the provision of health care, albeit by several different facilities. With the Federal Wage System, once the data are collected, they are translated into wage schedules through statistical analyses of wage rates for several thousand job matches identified during the survey process. The small numbers of many of our health care occupations would complicate this derivative process and confound our ability to make accurate use of the statistical procedures involved. It would also reduce our ability to be responsive to differing salaries in certain geographic areas, requiring the use of the derived wage rate as opposed to the competitive rate which may be lower or higher.

MX/RAIL GARRISON, SMALL ICBM PROGRAMS: COST EFFECTIVENESS ISSUES

Question: Mr. Secretary, the Administration has proposed funding for both the Small Mobile ICBM and the MX/Rail Garrison. Last year, the Chairman of the Joint Chiefs of Staff testified that funding both missile programs would require an unacceptable diversion of funds from other critical strategic and conventional military programs.

What has occurred since that time to make the diversion of funds away from other conventional and strategic weapons programs more acceptable to the Defense Department? What are the combined costs of the two ICBM programs during the next five years and through their full deployment?

Answer: When President Reagan directed two and a half years ago that DoD proceed with both Peacekeeper Rail Garrison and the Small ICBM, the two programs were essentially concurrent. Both systems were to enter full scale development at the same time and the initial operational capability (IOC) for Peacekeeper Rail Garrison preceded the planned IOC for Small ICBM by only one year. This ambitious development and procurement program is the one that the Chairman of the Joint Chiefs of Staff claimed could not be carried out without an unacceptable diversion of funds from other areas.

Since that time three things have changed. First, the cost estimates for the Small ICBM are lower. Second, we have decided to redeploy the 50 Peacekeepers now in silos to rail garrison, rather than deploy new missiles to rail garrison. This has reduced near-term costs associated with the procurement of new missiles for deployment. Finally, and most important, we have sequenced the programs so that fifty Peacekeepers in rail garrison are deployed during FY92-94 and initial Small ICBM deployments occur in the late 1990s. Small ICBM development is supported at a modest level in the FYDP.

The combined estimated acquisition costs (RDT&E, Procurement, MILCON) for the two ICBM programs is about $7 billion (FYDP$) or $6.5 billion (FY89$) during FY90-94. The combined acquisition cost is about $30-35 billion (FY89$) through full deployment, assuming we procure 500 single-warhead Small ICBMs. These costs do not include the cost of Peacekeeper test missiles that would be required even if Peacekeepers were not redeployed from silos, nor do they include operations and support costs. The combined acquisition cost is uncertain since the restructured Small ICBM program has not been fully costed out at this time.

BUDGET PRIORITIES FOR STRATEGIC PROGRAMS

Question: In considering budget constraints, further reductions, or program alterations, how would you rank your priorities amoung the following strategic programs: A) MX Rail Garrison; B) Small ICBM; C) B-2 bomber; D) fixing the B-1B bombers electronic countermeasures systems; and E) SDI funding in FY 90 at more than a zero real growth level?

Answer: All these programs are funded under the President's FY 90-91 budget. The funding levels, however, reflect budget priorities balanced between deterrence requirements and the degree of risk taken by the pace of force modernization. For example, we believe that the President's funding recommendations for Peacekeeper and Small ICBM reflect the need to deploy some numbers of mobile ICBMs as quickly as possible to increase the effectiveness of ICBM leg of the Triad. Peacekeeper Rail Garrison does this quickly and at a affordable price. Later on in the 90s when the Small ICBM becomes available, we can begin its deployment further enhancing the deterrent capability. The same can be said about funding for B-1B and B-2. We must fix the B-1's electronic countermeasures problem now, while we protect future penetration capabilities with the B-2, which will have great potential the counter postulated Soviet threats. Funding for SDI research also represents a budget priority today, which holds great promise for the future to enhance significatly the U.S. deterrent potential through defense. Until this research comes to fruition and a defensive system is deployed, U.S. deterrence policy must continue to rely on offensive forces.

LINK BETWEEN SMALL ICBM & RAIL GARRISON

Question: Some Small ICBM proponents may try to link progress on that program with progress and funding of the MX/Rail Garrison program. They also might try to add funds to the Small ICBM program. What would be the Defense Department's position on those two proposals?

Answer: I believe the President's funding proposal for ICBMs strikes a balance between an early deployment of a U.S. mobile missile system (Peacekeeper Rail Garrison) solving a significant portion of the ICBM vulnerability problem against the most probable scenario--Soviet nuclear aggression stemming from a conventional conflict--and our long term modernization requirements. Linking the Peacekeeper Rail Garrison rebasing program, which is ahead of the Small Missile program by several years, would delay the deployment of a U.S. mobile system, increase the final cost of fielding these missiles, and decrease the U.S. deterrent during the period of delay. In this constrained budget environment, adding more funds to the Small Missile program would come at the expense of another Defense program. In doing so, the balance established between risk and the pace of modernization would be altered. As such, neither of the two proposals offer any advantage over the President's current budget estimates for ICBM modernization.

MISSILE FUNDING PROPOSALS

Question: If the Department opposes those proposals, how strongly would it object to them?

Answer: We would have to examine the details of the legislation before any assessment could be made on the impact to the overall Defense budget or an individual program.

ADDITIONAL FUNDS FOR SMALL ICBM

Question: What higher priority strategic and conventional weapons programs would be threatened by increased funding needs for the Small ICBM in the future, if program supporters are successful in adding funds in FY 90?

Answer: I cannot predict at this time, without knowing more about the funding profile put forth in the legislation, the nature of the impact to other defense programs.

RAIL GARRISON BASES

Question: When will the bases for the MX/Rail Garrison program be announced, now that the President has decided to continue that program?

Answer: The first Rail Garrison base will be located at F. E. Warren AFB, Wyoming. Other bases will be announced very soon as we near completion of the operational effectiveness and environmental asssessments of the other candidate Air Force bases.

The Goals of SDI

Question: Secretary Atwood, even after cutting $8 BILLION from the Strategic Defense Initiative during the next five years, President Bush still intends to spend $33 BILLION on the program during this period. How can the Defense Department justify allocating such huge resources to SDI in this period of fiscal constraint when the Administration has not yet even completed the National Security Decision Directive outlining SDI goals/objectives?

Answer: The Administration has completed its review of national security objectives, and the President has determined that the goals of the Strategic Defense Initiative remain unchanged. After reviewing trends in deterrence, the missions and potential capabilities of defenses, and the technological progress since March 1983, the President directed the Department of Defense to develop options, within the Strategic Defense Initiative, for strengthening deterrence and stability through the deployment of strategic defenses based on advanced technologies. As a consequence of the objectives which the President has set for the SDI, the Department of Defense will set aside not less that $33 billion for SDI in the current Five-Year Defense Program.

Deployment Decision

Question: Under the revised budget, DoD says SDI has been restructured to lead to a "deployment srategy decision" for a Strategic Defense System as early as 1992. Previously, SDI was working toward an early 1990's deployment decision, which we were told had been delayed repeatedly by past budget cuts. What is the difference between a deployment strategy decision in 1992 and a deployment decision in the early 1990's? Is the Bush Administration trying to avoid making difficult decisions about the pace and objective of the program by postponing key decision dates? Does this mean that deployment of strategic defenses will be further delayed, and by how long?

Answer: The Department of Defense is conducting the Strategic Defense Initiative in such a manner as to permit the President to make an informed decision on the deployment of strategic defenses within the next four years.

QUESTION: Last December, the Chairman of the Joint Chiefs of Staff, Admiral Crowe, stated that many questions remained unanswered about SDI, despite progress in the program. He said SDI cost estimates remained uncertain as to whether the U.S. can afford it, and whether the return on the investment will justify it. Do you agree with Admiral Crowe, and what do you consider the key unanswered cost, schedule, technology, and military--and cost-effectiveness questions about SDI?

ANSWER: The Strategic Defense Initiative is a research and technology development program to determine the technical feasibility of strategic defenses against ballistic missiles. Estimates for the costs of acquiring such a defense, while improving, are still estimates. However, the technical progress of the program and our steadily improving cost estimating efforts give us great confidence in the specific estimate produced for last year's Defense Acquisition Board review.

The significant technical progress in the SDI program has directly and positively impacted our ability to refine cost estimates for acquiring a Strategic Defense System (SDS). One key result of this progress

is that projected acquisition costs for an effective Phase I concept have been reduced from $115 billion to $59 billion in FY 1988 dollars. (This represents a 40 percent reduction in projected acquisition costs from the June 1988 Defense Acquisition Board review.) In addition, major advances have occurred in technology base activities which provide the basis for possibly reducing the cost of upgrades to SDS Phase I and for new capabilities for follow-on phases. The result is a more realistic prospect of achieving an effective and affordable multilayered defense against strategic ballistic missiles then previously existed.

The $69 billion cost estimate has been rigorously scrutinized and has been validated by the Cost Analysis Improvement Group). In addition, this figure is a conservative estimate of the acquisition costs and has great potential for further reductions.

The SDI program seeks to continue to emphasize the importance of cost reduction and enhanced producibility techniques in its research efforts. For example, SDIO will continue to sponsor research that will consider reducing the costs of systems both through cost performance tradeoffs and the infusion of emerging technology. Two of SDI's ultimate goals are a properly balanced architecture that allocates functions in the most economical way and an industry that efficiently adds value to its products using the widest technology and capital base. With this in mind, SDIO is exploring the following areas as targets for cost reductions: Optics, Focal plane Arrays, Signal Processing, Space Power, Launch, Materials and Structures, and Alternative Space Based Architectures.

With regard to your concerns about military- and cost-effectiveness, these are being carefully considered by the SDI program. As you are aware, an effective strategic defense system that will counter offensive ballistic missiles to a meaningful degree will have to meet the criteria of military effectiveness, survivability, and cost effectiveness at the margin. These three specific criteria have guided the SDI program from its beginning and will continue to do so.

Lastly, let me address you concerns about the technologies SDI is pursuing. From its beginning the SDI program has had the same overall goal-- to conduct a vigorous research and technology development program that could provide the basis for an informed decision regarding the feasibility of eliminating the threat posed by ballistic missiles of all ranges. As such, the SDIO's research efforts are designed to answer many of the key questions regarding the feasibility of a strategic defense. Within this research program many technologies are being explored as possible contributors to a defensive system. However, SDIO is working vigorously on specific areas of technical risk, which will be critical to determining the feasibility of a defense. These are: Phenomenology and Targets, Radiation Hardening, Space Power, Survivability, Communications, and System Integration.

For a thorough discussion of all the technologies pursued by the SDI program, I would refer you to the 1989 Report to Congress.

QUESTION: Under the revised Bush SDI budget, will the United States breach the narrow interpretation of the Anti-Ballistic Missile (ABM) Treaty? Which specific SDI programs and activities would constitute this breach, and when would Congress and the Administration have to decide whether to fund such activities?

ANSWER: As reported in the 1989 Report to Congress on the SDI, all tests then planned for FY90 and FY91 have been reviewed in detail and determined to be compliant with the ABM Treaty. As new tests are added (such as Brilliant Pebbles testing) or old tests are modified, they are consistently being reexamined to insure the compliance standards used for SDI since its inception are maintained. It is expected that SDI can continue to conduct the program in a way that complies with the restrictive interpretation for several years beyond FY91, depending upon the outcome of earlier tests and compliance judgments that have yet to be finalized. When that time comes, the Administration is committed to consulting with Congress on the appropriate course of action to take.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

Increased Reliance on Reserve Forces

Question: Given the Nation's increased dependence on the reserve components, how well are each of the components currently able to perform their wartime mission, and what are some of the most critical specific readiness problems that we would face if the reserves were deployed? Specifically, please submit for the record, the current readiness levels of units that would be deployed in the first 30 days after mobilization. Are these units substantially more ready than those that would be deployed later? In view of the proposed cuts in active strength, doesn't it make sense to train and equip additional Guard and Reserve units?

Answer: In general, the Reserve components are capable of performing the missions that have been assigned. Increases in availability of resources and modernization of the Reserve components have resulted in dramatic improvement in the capability of their forces since 1980. A 1988/89 Army force assessment of major combat units indicates that modernization has improved the combat potential of Reserve component major combat units by 45 percent between 1985 and 1988. Our Reserve Forces are more ready than ever before in the peacetime history of the country. This judgment is buttressed in direct competitions involving teams from the Active and Reserve components, during exercises like REFORGER, TEAM SPIRIT, and TEAM WORK 88, during inspections and evaluations conducted by Active duty counterparts and by the latest resourcing level figures.

Reserve Forces do, however, face significant continuing challenges, due in part to the rapidity to which changes in the Total Force Policy have taken place in recent years. There are some areas, notably in the combat support and combat service support units in the Army, where shortages of resources continue to limit the ability of some units to perform their mission. Additionally, largely because of limitations on training time, most Reserve units are not trained to accomplish as many tasks as their Active duty counterparts. As a result, gaining operational commanders are somewhat limited in their flexibility in employing Reserve Forces.

Whether a particular mission should be assigned to Reserve Forces or to Active Forces depends generally, of course, upon the nature of the mission, i.e., the specific military capability that is required. Force mix decisions must necessarily address a broad range of factors, such as the comparative cost of Active/Reserve Forces; the availability of sufficient modern equipment of a type which is appropriate to the specific mission; the availability of sufficient numbers of personnel who are fully trained and who have the particular military skills that are required; the existence of an adequate CONUS sustaining base to ensure equitable overseas tours for Active Forces; whether the mission under consideration requires forward-based forces; the urgency with which the particular mission must be performed in contingency situations short of mobilization; and other, similar factors. As you see, the question of proper force mix is more complex than it appears at first. I cannot provide an umbrella answer to your question. Each proposed mission assignment to the Reserve components must be evaluated as an individual case, considering those factors I have just mentioned.

Question: The force mix decision-making process is important in deciding whether missions should be placed in either the active or reserve forces. Yet there appears to be no group within the Office of the Secretary of Defense or the Joint Chiefs of Staff with specific responsibility for the oversight and direction of the Total Force structure and changing balance of active and reserve forces. Do you agree with a November, 1988 GAO study that suggests that the Department of Defense managers have not provided guidance for deciding whether forces should be placed into either the active or reserve forces, or what kind of missions and responsibilities they should have within that mix? Please explain how force mix decisions are now made and what the prospects are for improving the decision-making process. With the

proposed declines in active forces, the resolution of this issue becomes increasingly urgent.

Answer: There is an organization in the Office of the Secretary of Defense responsible for oversight and direction of the Total Force structure. That organization is the Office of the Assistant Secretary of Defense for Force Management and Personnel (OASD(FM&P)). Of course, many other DoD offices participate in the development of total force policy and force mix decisions.

We have a process for determining active-reserve mix decisions. Factors which are considered include the need for immediate deployment, peacetime forward deployment, required levels of training, the nature of the unit's peacetime workload, readiness, and cost. In addition, we must plan for a peacetime rotation base for personnel assigned OCONUS or to sea duty. I agree that our total force policy and decision-making processes can be improved.

The Assistant Secretary of Defense for Force Management and Personnel has drafted a Total Force Policy directive. It has been formally staffed, is being revised, and will be sent out shortly for a second and final formal coordination. This directive will clarify policy, assign responsibilities, standardize definitions, and support the development of uniform and consistent evaluation criteria and tools. The Rand Corporation and the Logistics Management Institute are assisting the Department in the development of tools for improving total force mix decisions.

EQUIPMENT

Question: Equipment shortages and obsolescence continue to be problems that adversely affect the military preparedness and capability of the reserve components. According to a November 1988 GAO report, it is unlikely that equipment shortages will be solved soon in light of current budget constraints and lower priority generally given to the reserve components with respect to procuring new equipment. Please provide for the record your specific actions to make sure that unit deployment priorities are considered in equipment allocation.

Answer: The Department's first to fight, first to be equipped policy has generally worked well in guiding equipment distribution within the Services and their Reserve components (RC). Congressional appropriations for procurement and military departmental allocations of resources for equipment have resulted in unprecedented deliveries of equipment to the RCs. If mobilized today, the National Guard and Reserve forces would be able to field overall, in terms of dollar value, almost 84 percent of the current wartime requirements for the selected equipment items identified in the FY 1990 National Guard and Reserve Equipment Report--up from 77 percent in FY 1987. We are concerned, however, with our ability to continue improving the fill rate in light of current and anticipated budget constraints. Service adherence to the first to fight equipment distribution policy will become more critical during this period of constrained resources. The referenced GAO report specifically expressed concern with the Army's equippage policy. The Department's reply addressed the Army's equipment distribution system and the noted exceptions. Specifically, the Department of the Army Master Deployment List (DAMPL) prioritizes units, regardless of component, for deployment in accordance with contingency plans. The DAMPL, in turn, drives the Total Army Equipment Distribution Plan (TAEDP) to determine the order in which units are to be equipped. The Department recognizes, however, that the DAMPL can be affected by senior leadership decisions. Examples of programs receiving elevated priority include the equipping of the Sixth and Tenth Light Infantry Divisions and the Reserve component Minimum Essential Equipment for Training. Another exception was the Army's cross leveling of units' equipment to a minimum deployable (C-3) level before equipping like units to a higher level. The Department remains concerned with equippage rates, especially with the Army Reserve which has the bulk of the deploying combat service support units. We continue closely monitoring the Services' implementation of the Department's equipment distribution policy to include the processes and rationale for exceptions as well as the results. We submit to Congress the annual National Guard and Reserve Equipment Report which provides an assessment of equipment distribution in the aggregate by dollar value and line item. We are currently developing, and have in limited operation, a program which makes a similar assessment of major equipment line items by unit.

FUNDING

Question: The share of defense funding going to reserve components has increased in the past several years. To the extent that scarce defense dollars buy more in the reserves, this may be appropriate. However, all Guard and Reserve missions and programs are not equally critical to wartime readiness. What funding shortfalls do your analyses indicate are most critical?

Answer: We are not aware of any significant change in the share of defense funding going to the Reserve components over the past several years. We have discussed the question of funding shortfalls with the Reserve components. They indicate that some of the biggest challenges facing them will be shortfalls in such areas as equipment modernization, data automation and communication upgrades, repair and maintenance of existing physical plants, depot maintenance, supplies, and replacement of organizational clothing and equipment.

ARMY AVIATION UNITS

QUESTION. What does the Army plan to do about the degradation in combat capability suffered by the Army National Guard in aviation units when Guard aviation units are downsized with no timely delivery of modern aircraft to maintain required levels of capability in the current timeframe?

ANSWER. Under the Army Aviation Modernization Plan many Army National Guard attack, air recon, and cargo helicopter units will receive modernized or upgraded aviation systems simul-taneously with the elimination of older, outdated aircraft. These units will be much improved in combat capability with the ability to conduct day and night operations on the modern battlefield with increased efficiency and lethality. However, reductions in utility helicopters for early downsizing remains a concern in the Army National Guard.

In utility helicopter systems, there will be an increase in UH-60 distribution to Army National Guard units from the 57 currently on hand to approximately 184 by FY 94, but there will be a gap between the early downsizing and modernization of some Army National Guard units, as it will be in other components. There will also be a gap, or possibly a decrement in capability, if the UH-1 service life extension program is not fully funded to meet command and control requirements.

The Army staff evaluated the risks associated with the early downsizing of aviation units in the total force prior to modernization and determined that the short term risk associated with the degradation in combat capability was acceptable, provided this reduction facilitates adequate resources for future Army aviation modernization.

V-22 Program (U)

(U) QUESTION: According to information released by the Defense Department on April 25, 1989, the V-22 program is to be cancelled. If the Congress were to agree to this proposal, what, if anything, would be the impact on the need for airlift capability for the Special Operations Forces? For example, how many more, if any, C-130 aircraft would be needed?

(U) ANSWER: If the V-22 program is cancelled, then the Special Operations Forces (SOF) variant, the CV-22A, would also be cancelled. The cost to develop the CV-22A independently would be prohibitive.

(S) The 55 CV-22A aircraft contained in the Secretary of Defense's June 1, 1987 SOF Airlift Report to Congress were being procured to accomplish approximately (d) percent of the theater CINCs' SOF airlift requirements. The Air Force estimates that, in addition to those aircraft already programmed, it would need to acquire (deleted) as a rough substitute for lift capacity.

(S) While this alternative force structure could technically accomplish most of the CV-22A missions, (deleted). Further, the cost of this force structure would be similar to the cost of the CV-22A.

(S) Given the (deleted) and high cost involved, buying more current-generation SOF aircraft to cover the CV-22A's mission is not considered a practical alternative.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

AH-64 Apache

QUESTION: In light of these priorities, how can the Defense Department justify the cancellation of the Apache after FY 90?

ANSWER: The AH-64 is being terminated after the FY 1991 procurement based on a reassessment of the AH-64 requirement. Procurement of 807 helicopters will outfit 40 battalions of 15 aircraft each. This will ensure that all first-to-fight units in Europe will be outfitted with AH-64 helicopters.

QUESTION: Because Congress is committed to the complete funding of the Apache over the course of the coming fiscal years, why has the Administration ignored the stated intent of Congress and singled out this weapon for cancellation when fulfilling the procurement will actually save this country important tax dollars?

ANSWER: Termination of the AH-64 helicopter will save the Department over $1.6 billion in FY 1992-94. This action is consistent with congressional intent to procure weapon systems at economic production rates rather than finance higher unit costs as a result of program stretchouts.

QUESTION: Apparently the Apache is being cancelled because it will ultimately be replaced by the LHX helicopter. The LHX, however, is not expected to begin rolling off the production lines until late in the next decade (post FY 95). Why shut down production of the Apache so early? What anti-tank aircraft will the Army use to defend our allies and our national security in the years between the Apache shutdown and initiation of LHX production?

ANSWER: The AH-64 termination is unrelated to the development of an attack LHX. The 807 AH-64 helicopters procured through FY 1991 will continue to be the primary anti-armor attack helicopter along with the 1,079 AH-1S Cobra/TOW helicopters. The AH-64 will be fielded in 40 battalions: 26 Active Component battalions, 2 Army Reserve battalions, and 12 National Guard battalions.

QUESTION: With increased reliance on the National Guard under the Bush Defense Budget priorities, why is this important weapon being cut back by the Bush Administration at this crucial time?

ANSWER: The AH-64 production is terminated in order to provide resources in FY 1992-94 to maintain economic production rates as well as to develop and procure the LHX. The amended budget provides sufficient funding to field 12 of the planned 15 AH-64 National Guard battalions. The three National Guard battalions that will not receive the AH-64 are in the last to deploy category.

OH-58D Army Helicopter Improvement Program

QUESTION: Given that the AHIP has been determined by the Secretary of the Army to be "central to meeting the Army's day/night, armed scout requirements through the end of the next decade" and that the LHX is not scheduled to be deployed until the late 1990s, why does the Bush Administration propose that the AHIP be cancelled?

ANSWER: The $1.6 billion cost to modify the remaining 168 aircraft in FY 1990-94 is not affordable since it provides only a marginal, interim capability. In a constrained resources environment, the Department's limited resources should be concentrated on the development and procurement of the next generation LHX helicopter. The revised program will provide an inventory of 207 OH-58D helicopters for the field artillery aerial observer role, and as an interim scout pending fielding of the LHX.

MX RAIL GARRISON VS. MIDGETMAN

Question: There has been considerable debate over the years about the desirability of a mobile strategic missile system. At the Secretary's urging, President Bush has decided to pursue the Rail Garrison option for the MX in the near term while funding the Midgetman mobile system at reduced levels until the MX is fully deployed.

What guarantees can you provide that the Midgetman will come on line in the out years? The suggestion has been raised by some Members that MX funding be tied to continued development and testing of Midgetman technology. How does the Bush Administration view such a proposal?

Answer: The funding proposal for ICBMs provides for a phased approach to ICBM modernization. Tying the progress of the Midgetman program to Peacekeeper Rail Garrison redeployments will wipe out the near term prospects for fully deployed mobile missile system. As for a guarantee, we are committed to the continued development of the Small ICBM system based on hardened mobile launchers.

Question: How does the decision to pursue the MX rail garrison option affect the deterrence posture vis-a-vis the Soviets? Is the time necessary to move and target the missiles sufficient to withstand a Soviet first strike?

Answer: Rebasing 50 Peacekeeper from Minuteman silos onto trains located in garrisons will add a considerable measure of effectiveness to the ICBM leg of the Triad against the most probable threat scenario--Soviet aggression stemming from a conventional conflict. In such a scenario, it is highly likely that the U.S. would rapidly increase readiness levels including a change in the day-to-day posture of strategic forces at the on set of tensions and beginning of serious diplomacy. During such times it is highly likely that the missile trains will be, at a minimum, dispersed, or placed on full patrol.

Should diplomacy fail and conflict begin at the conventional level, the U.S. would take all actions to ensure the maximum effectiveness of all three legs of the Triad. Such actions could include a show of force communicating a national resolve to take whatever action necessary against any Soviet encroachment on the United States or its allies, e.g., dispersal of the strategic bomber force. Similarly, Peacekeeper missiles in garrison during peacetime would be repostured--either dispersed from their garrison shelters or placed on patrol--during times of increased tensions or at the beginning of a conventional war, in order to remove an incentive for a Soviet first strike. This can be accomplished in minutes to a a few hours depending on the posture of personnel at the time of the order. Once on patrol, the amount of time a train may loiter at one location is a function of the enemy's reconnaissance cycle coupled with the time required for targeting a missile. We believe, therefore, that sufficient time will exist to move the trains under the most likely circumstance to reduce the risk from Soviet targeting of the garrison shelters.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

RESEARCH FUNDING

QUESTION: One thing that we can all agree on is that the furor over the FSX deal with Japan shows that Americans are deeply concerned about our economic security. Basic research is crucial to our economic, and national security. Yet DoD funding for basic research, as a percent of GNP, shrank during the Reagan years. And this first Bush defense budget actually cuts funding for basic research by about 5% (9% in real terms) from FY 89. What do you think about this situation and shouldn't DoD be moving to reverse this trend?

ANSWER: Since our total budget is severely constrained, we are not able to do all of the things we would like to do in any area of the budget, including R&D. I will do my best within the overall budgetary constraints to fund a robust Research (6.1) program. As you noted, this program makes essential contributions to our long-term military, as well as economic, competitiveness. I am pleased that we were able to maintain the original FY 90 and FY 91 6.1 requests when we reduced the defense budget to conform with the recent budget summit agreement.

QUESTION: When is DoD going to be able to share more information on the B-2 Stealth bomber with the public? We don't need to release manufacturing details, but it is troubling that only some rudimentary cost data is available to the people, yet they are being asked to pay $68 billion for it.

ANSWER: There are several reasons why security has been so tight on the B-2 program. But first, it should be noted that there is considerable oversight of the B-2 program by persons outside the Department of Defense. From its beginning, the B-2 program has been supervised by appropriate Congressional members--representatives of the public. A significant number of House and Senate members are fully briefed on the program. In fact, any Congressional member requesting access will be briefed on the B-2 (with the concurrence of the appropriate Chairman and ranking minority member). In addition, the B-2, as well as other Special Access Programs, is the subject of closed hearings by all four of the defense oversight committees each year. Further, personnel from the General Accounting Office have been resident for over three years at the System Program Office at Wright-Patterson AFB, OH, and have conducted continuous reviews on all aspects of the program. The GAO informs key Congressional committees on its view of the B-2 program cost, performance, and schedule. There has certainly been no attempt to keep the program from proper oversight. Tight security has been in effect to keep program information from our adversaries. To begin with, this security protects the technological advantage we have enjoyed and, with continued technological development and security, should continue to enjoy over the Soviets. This technology edge is perhaps the greatest asset we have in dealing with the Soviets. By keeping our capabilities hidden, we deny them the time to react to those capabilities and inhibit their ability to develop countermeasures. The security surrounding the program goes a long way in protecting the dollar investment of the taxpayer, as it drives the Soviets to develop their own technology in this area as opposed to providing it to them. By denying them time to react to our capabilities, we enhance the effectiveness and the technological life of the weapon system. Although the B-2 has recently been more widely seen and discussed, those critical features of the aircraft which make it unique and do the most to make it effective, will continue to be closely guarded.

Question: (Senator Bumpers) I read recently where the British have a budget surplus of $25 billion this year. Why can't we get them to pick up a little more of the NATO burden since they are so flush with cash?

Answer: This year the British have effectively arrested the downward spiral in their defense spending and we anticipate that by 1991 some substantial increases in defense allocations may be possible. However, it is also important to note that along with the surplus, which was actually about $21 billion, of which about half was from proceeds from privatization of government owned business, is a trade deficit of record proportions (about $25 billion). The last five months suggest that the trade deficit for this year could exceed $35 billion. Inflation has crept up from 4% at the beginning of 1988 to a current annual rate of 6-8% in spite of the surplus budget. Consequently while the British do have a surplus in their budget, it is not necessarily symptomatic of an economy that, at this time, is capable of supporting significantly increased outlays in government spending.

QUESTIONS FROM SENATOR BUMPERS FOR SEC. ATWOOD

QUESTION: My colleague, Frank Murkowski, has written (April 14) to Secretary Cheney about serious allegations of bid rigging by Japanese construction firms at Yokosuka Naval Base and U.S. bases on Okinawa. Last December, the Japanese press reported that the Japanese Fair Trade Commission had fined 70 of the firms for illegal activities associated with bids at the base. The activities involved participation in a bid-rigging cartel.

I understand that to date the Navy has yet to take any action leading to debarment of the Japanese firms involved. Will you be looking into this matter? When can Senator Murkowski expect an answer to his letter?

ANSWER: A response provided to Senator Murkowski on April 10, 1989 indicated that an NIS investigation uncovered collusive bidding among some 160 Japanese construction contractors. The Commander-in-Chief, U.S. Pacific Fleet, forwarded proposed debarment actions against nine Japanese contractors. The Navy Debarment Committee is reviewing these cases. On May 1, the Navy proposed four companies and four corporate officials for debarment. The Debarment Committee continues its review of the other companies and will be making a recommendation concerning their disposition in the near future.

We have prepared a letter informing Senator Murkowski of these further developments which he will receive shortly.

QUESTIONS SUBMITTED BY SENATOR TOM HARKIN

Future defense budget levels

Question. Your prepared statement includes assurances that the decisions reflected in the amended fiscal year 1990/91 defense budget will "enable us to achieve the necessary level of defense at a cost we can afford in the future." But your amended DoD budget assumes increases in budget authority of $15.4 billion in 1991, $11 billion in 1992, and $15.9 billion in 1993. Under Gramm-Rudman-Hollings, the federal budget must be cut by at least $36 billion, $38 billion, and $26 billion in those same years.

Do you consider these defense increases in budget authority likely?

Answer. The Department's responsibility is to request the resources necessary to perform its mission, within available resources, not that level most likely to be approved by the Congress. The budget authority levels we have submitted are part of the Administration's comprehensive plan to meet Gramm-Rudman-Hollings targets. This request is based on an objective evaluation of the requirements necessary to meet our military missions within the current fiscal constraints. We hope that the Congress would work with us by supporting the bipartisan agreement for FY 1990 and our efforts to provide long-term, modest growth in defense funding so vital to the effectiveness of our defense program.

Question. If so, what combination of revenues, cuts in discretionary domestic spending, or shortfalls in the G-R-H deficit targets does the Department of Defense assume in your planning to provide these increases in defense budget authority for 1991, 1992, and 1993?

Answer. The Department prepares the budget request for military resources within the fiscal guidance provided by OMB. The total defense funding levels are part of an overall federal expenditure and revenue proposal approved by the President. As such, it is not the responsibility of the Department to propose changes to the funding levels for other federal agencies or changes to fiscal policy.

Question. Has the Department of Defense made alternative plans assuming more realistic economic assumptions, such as equally splitting cuts between discretionary domestic and military, or making defense cuts of $18 billion, $19 billion, and $13 billion over the next three years?

Answer. The Department's budget plan for FY 1990-FY 1994 has been submitted to the Congress and is based on the economic assumptions provided by OMB and the funding levels approved by the President. These assumptions and funding levels have not been changed, therefore, we have not developed alternative plans assuming different economic assumptions or funding levels.

Future defense budget levels

Question. What would be the impact on the fiscal year 1990 defense budget plan if these future decreases in defense budget levels were deemed likely.

Answer. The FY 1990 budget request includes adjustments necessary to meet the funding level agreed to in the budget summit. These adjustments were not "quick fixes" dealing only with the current year, but were made within the context of a balanced FY 1990-94 program budget plan. Continued reductions to outyear budget levels will jeopardize that balance and seriously hinder our ability to provide much-needed stability and continuity in defense funding. This will lead to a degradation of the capabilities of our existing forces and increase procurement and development costs, thereby undercutting the effectiveness of the force structure and acquisition decisions we have made in preparing this budget.

QUESTIONS SUBMITTED BY SENATOR ALFONSE M. D'AMATO

F-14D

QUESTION: By terminating new production of the F-14D, the Navy is committing itself irreversibly to the Navy Advanced Tactical Fighter (NATF). Should the NATF turn into the TFX of the 1990's, how will naval aviation carry out the fleet air defense mission?

ANSWER: The Navy is committed to the development of the NATF. Navy engineers and program managers are working very closely with industry and their Air Force counterparts to avoid another TFX. Should NATF development slide either for technical or fiscal considerations, the Navy will experience some fighter aircraft inventory shortfalls as the total inventory of F-14D's decays due to attrition and airframe retirements. The Navy has experienced similar shortfalls in other carrier based aircraft and although the solutions are difficult and not ideal, they can be managed with proven techniques. In general these entail transfering airplanes from non-deploying sources (reserves, FRS, squadrons returning from deployment, pipeline) to deploying squadrons.

EA-6B PRODUCTION

QUESTION: The Navy is currently short of EA-6B's and there is no follow-on aircraft planned, yet the Cheney budget "zeroes" EA-6B production. Is electronic warfare no longer a factor in naval air combat? If the mission remains important, with what does the Navy intend to conduct electronic warfare through the next decade?

ANSWER: The electronic warfare mission still carries the same, if not more weight as it has historically. This is shown in the Naval Aviation Report (NAR) which reflects a requirement for 147 aircraft based upon the EA-6B component of the Carrier Air Wing growing from four to five aircraft. It is also reflected in the 1990 budget which provides for remanufacture of EA-6B ICAP aircraft to the ADVCAP version beginning in FY-91.

The Navy intends to conduct electronic warfare through the 1990's with EA-6B aircraft remanufactured to the ADVCAP configuration.

NATIONAL AEROSPACE PLANE

QUESTION: The National Aerospace Plane (NASP) program has a great deal of potential for military applications and was "sold" to Congress over the last several years on that basis by the Air Force, Navy, DARPA, and the SDIO. How is it that now this program is being shuffled off to NASA by the Defense Department?

ANSWER: The NASP is a worthy program. The issue is budgetary. The NASP is potentially a very high payoff effort but that payoff is long term. Given current severe budgetary pressures combined with the pressing needs for near term force enhancement and force sustainment programs, the decision was made by the Secretary of Defense to hand over management and funding responsibility for the NASP program to the National Aeronautiucs and Space Administration (NASA). The current DoD FY 1990/91 budget eliminates all DoD funding for the NASP except for up to $100 million in FY 1990 which (if appropriated by the Congress) will be used to help transition the program to NASA.

NATIONAL AEROSPACE PLANE (NASP) PROGRAM

QUESTION: I'd like to know specifically if the DOD is uninterested in hypersonic vehicles for reconnaissance missions, weapon delivery, and assured access to space?

ANSWER: The Department of Defense (DoD) is interested in all of these areas. Indeed, numerous Statements of Operational Need (SONs) from the Strategic Air Command and Air Force Space Command have documented their needs for manned aerospace vehicles operating in the transatmospheric and low earth orbit regimes.

It is because the current state of the Nation's hypersonic technology base does not provide the foundation to initiate a systems development program to meet the needs of the operational forces that the NASP program was initiated. The original NASP (X-30) program involved a joint DoD/NASA effort to determine the feasibility of hypersonic flight and direct insertion into orbit from a conventional runway using a single stage vehicle. The military (and civil) advantages of an operational follow-on vehicle to the X-30 that could provide routine access to near space (at greatly reduced cost) and extremely quick reaction/response times and transit for force projection to any point on earth (with no forward basing requirements) are obvious.

Unfortunately, pressing near term needs combined with current budgetary shortfalls have made it impracticable to pursue many worthy, very promising long term high payoff technology and systems development programs, including the National Aero-Space Plane.

SSN-688

Question: The numbers available to me comparing attack submarine procurement and retirements indicate that the Navy faces a major shortfall by the year 2000 even if Congress fully funds the SEAWOLF program through the next decade. What happened to the Chief of Naval Operations' requirement for 100 modern nuclear attack submarines? Considering recent Soviet advances in submarine technology and capability, what impact will this shortfall have on our attack submarine arm being able to carry out its mission?

Answer: The Navy remains committed to a minimum SSN force level goal of 100 multimission SSNs which is required to execute the U.S. Maritime Strategy against the Soviet threat of 1990's and beyond. The current and projected Soviet numerical advantage and continued evolution of Soviet submarine capabilities neccesitate the maintenance of our SSN force level goal of 100 SSNs.

The current production of the Improved SSN-688 Class and the introduction of the SSN-21 SEAWOLF Class will significantly enhance our submarine force's capability. With these more capable ships, we will be able to carry out the demands placed on the attack submarine force by the Maritime Strategy within the SSN force level goal of 100 SSNs.

B-1B

The Air Force is reported to be seeking $1.9 billion to fix nagging flaws in the B-1B.

Question: What are we buying with that money? Will we ever even achieve the baseline capability the B-1B was supposed to have in 1986, particularly in the area of electronic countermeasures.

Answer: Several B-1B baseline and non-baseline development and procurement efforts totaling $1.4 billion are programmed in the FY 90 Five Year Defense Plan (FYDP). The FYDP baseline request is for $739 million; $250 million for depot level support equipment and $489 million for a radar warning receiver. In addition, the Air Force is requesting other upgrades totaling $687 million. Such upgrades are needed in any system to maintain its combat effectiveness over the years and to extend its useful operational life. The upgrades include the SRAM II, Global Positioning System, microwave landing system, and advanced expendables as well as reliability and maintainability improvements. The FY 90/91 budget requested $346 million in R&D and procurement funds for the B-1B.

The B-1B was designed as a penetrating bomber and it is fully capable of performing that mission today. This design was based on relatively low radar cross-section, high speed, low altitude penetration, and electronic countermeasures (ECM). With the exception of ECM, the B-1B has met or exceeded the baseline capabilities. Low altitude terrain following masks the aircraft from enemy defenses. Low radar cross-section delays or precludes enemy detection. High subsonic speed further reduces the enemy's time to react. (Deleted.) The combination of these attributes and tactics with the B-1B's intercontinental range, excellent navigation, and precise bombing, make the B-1B SAC's foremost penetrating bomber.

(Deleted.) The Air Force recommends a two phased approach, the ALQ-161A "core" plus a radar warning receiver, for addressing the current ECM development shortcomings. In the face of an increasing threat, (deleted). This plan also lays the foundation for enhancements which can ensure that the B-1 can continue to penetrate through the 1990's.

QUESTION: How capable is the aircraft of carrying out its mission now?

ANSWER: The B-1B was designed with several features that would help it penetrate Soviet air defenses and destroy a variety of targets. Included in the list are high accuracy navigation and weapon delivery systems, small radar cross section, a very low altitude terrain following capability, high speed and electronic countermeasures (ECM). Of these characteristics, all have been successfully demonstrated with the exception of full ECM capability.

The B-1B is fully integrated into the Single Integrated Operational Plan (SIOP) today. The B-1B's capabilities provide it a higher probability of penetrating to high value targets best suited for gravity or short range attack missiles (SRAM) than does any other strategic bomber. These capabilities, [deleted] [deleted] will allow the B-1B to remain a viable penetrator into the mid 1990s. As with all combat aircraft, the need for incremental improvements in the B-1B's ECM can be anticipated.

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will stand in recess until Tuesday, May 9, and at that time we will meet to discuss classified programs in a closed session. Thank you very much, sir.

[Whereupon, at 11:57 a.m., Thursday, May 4, the subcommittee was recessed to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

FRIDAY, MARCH 17, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:01 in room SD-116, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Bumpers, Harkin, Rudman, and Cochran.

DEPARTMENT OF DEFENSE

JOINT CHIEFS OF STAFF

GLOBAL OVERVIEW OF INTERNATIONAL SECURITY ENVIRONMENT

STATEMENT OF ADM. WILLIAM J. CROWE, JR., USN, CHAIRMAN, JOINT CHIEFS OF STAFF

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. This afternoon we are pleased to have with us our Nation's highest military officer, Admiral Crowe, to present a global overview of the international security environment. The committee invited the Admiral to testify early in our budget review because the Defense Subcommittee will benefit greatly from receiving an updated view of the effectiveness of our Armed Forces against our potential adversaries and after proposed readiness and modernization programs are complete.

I am hopeful that we will be able to come away with new insights into how the opposing military forces are equipped, trained, and operate under realistic peacetime and battlefield conditions, and the contributions various U.S. and allied programs may make toward improving our defense capabilities.

A realistic, informed appraisal of the balance of forces and of program improvements is an essential component of the context of national defense needs which our appropriations work should address, and I must note that events are presently underway which may alter the entire context of our work this year.

First, the new administration has begun a far-reaching review of our national security policies and defense strategies, with a view toward ensuring compatibility among our commitments, strategies, capabilities, and resources. Second, I think importantly, NATO is drafting a new comprehensive concept of arms control and disarmament which could impact on various conventional and nuclear modernization programs.

Third, Soviet General Secretary Gorbachev's latest unilateral conventional arms control proposals and the beginning of the move to the conventional forces in Europe negotiations represent complex and difficult military and diplomatic challenges to the United States and to our allies.

Finally, the Federal budget constraints loom even larger over military spending. The new administration is drafting specific recommendations to reduce the fiscal year 1990 defense request while Congress contemplates the adverse national security consequences of the Gramm-Rudman-Hollings funding sequester if the fiscal year 1990 budget deficits are not yet met.

Admiral, you recently urged that the expected defense budget cuts not be based on narrow dollar concerns but instead be considered from the broader military and geopolitical perspectives. I should tell you that we need your help, your best personal and professional insights into how Congress might evaluate these major developments in the international security environment, how we should assess the sufficiency of the budget this year.

I am, as the chairman of this Committee of Appropriations, deeply concerned about the budget constraints and how they affect your responsibilities. At this moment even the Budget Committee is quite uncertain as to what the numbers are. We have not heard the final dollar figure for the S&L problems, nor have we determined what the OMB or the CBO numbers are going to be like.

So it should be a very challenging year for both of us.

Do you have anything you would like to say?

Senator **Rudman**. No; I am here to listen, Mr. Chairman. Welcome to my good friend, Admiral Crowe.

Senator **Inouye**. I have an opening statement from Senator D'Amato that I would like to put in the record at this point.

[The statement follows:]

STATEMENT OF SENATOR D'AMATO

Thank you, Mr. Chairman. I'm very glad that Admiral Crowe's appearance before this committee was able to be rescheduled while we are still early in the budget cycle. His views on the worldwide security situation will be vital to the process we must go through to evaluate the funding requests of the Defense Department.

One of the most difficult choices we have before us is the proposal, espoused by members of this committee in previous hearings, to withdraw some portion of the U.S. troops or dependents stationed overseas. Admiral Crowe's assessment of the military's ability to fulfill our foreign commitments and sustain the morale and readiness of U.S. forces is paramount to this question.

I also look forward to hearing Admiral Crowe's comments on what he conceives the role of the military to be in the national drug control strategy called for by President Bush.

We must have a coordinated approach among all of the services. Support from the very top of the Defense Department will be necessary if we are to be effective in this difficult but winnable fight.

Thank you, Mr. Chairman.

Senator **Inouye**. Admiral, go ahead.

Admiral **Crowe**. Thank you very much, Mr. Chairman. I appreciate this opportunity. It is good to see you back in the chair. I was anticipating testifying, of course, before. I have submitted a written statement for the record and, with your permission, I will put it in the record.

Senator INOUYE. It will be made part of the record.

HIGHLIGHTS OF STATEMENT

Admiral CROWE. It is my intention only to highlight some of the major points. I think that would be a better expenditure of our time.

As you know, President Bush has modified the Defense fiscal guidance previously issued by President Reagan and initiated an interagency review of our national defense strategy. In turn, the services are reworking their programs in order to square with his priorities. Until this task is completed, I am not really knowledgeable or prepared to address in specifics the defense budget for 1990.

I think I should talk a little bit, in light of your remarks, Mr. Chairman, about that part of my statement that addressed some of the Soviet developments. We feel, of course, in peacetime the United States bounds the cost of defense with a military strategy that is designed fundamentally to deter major hostilities and to support our foreign and economic policies. This practice, of course, dictates a healthy strategic and theater nuclear capability and high-quality conventional forces, as well as combat forces forward-deployed to areas of special interest.

In my view, the U.S. Government has seldom been engaged in a more complex array of international negotiations and relationships than it is today. In such an environment I see no alternative to the tried and proven formula of dealing from strength as we seek to secure our future.

My statement does address in some length Soviet military power. This committee is, of course, aware of the impressive strength the Kremlin has mustered over the last few decades and that the U.S.S.R. represents our most imposing potential adversary. Any U.S. military strategy must confront those realities. It is true, of course, that we are witnessing a remarkable series of events in Moscow.

General Secretary Gorbachev has outlined in some detail the economic woes of the U.S.S.R. and launched perestroika and glasnost in an effort to prepare his country for the next century. His policies, if carried successfully to conclusion, could have profound implications not only for his own nation, but also for Russian relationships with the free world.

Given these events, I was not surprised and I was also conditioned by the few days I spent last summer with Marshal Akhromeyev. I really was not surprised by the unilateral force modifications announced last December. I was, however, impressed by the size of those announced reductions and the proposal to complete them by 1990 to 1991. If carried out, these Soviet decreases will influence the balance of land power in Asia. Opposite NATO's central front, Warsaw Pact cutbacks could represent a downpayment on a genuinely less offensive posture and virtually eliminate the surprise attack option for Soviet ground forces.

Perhaps even more important, certainly from my perspective, is the recent announcement of possible future slashes in production and the redirection of military plants to civilian output.

Our task, of course, is to satisfy ourselves that these intentions actually materialize. It is equally important to understand that much of the Soviet picture will remain untouched by these unilateral promises—notably strategic weapons, naval power, Soviet space capabilities, et cetera. Even if Mr. Gorbachev's reductions take place, the U.S.S.R. will still have 4.6 million men under arms and vastly superior numbers in practically every category of ground weapons.

But, Mr. Chairman, my statement then goes on to address various categories as well as regions and the military balance. I think our time would probably be more profitable for me to leave that and address your questions.

I would like to just quickly, though, review my concluding statements because I think they are germane to what you were talking about earlier.

America will enter the 1990's spending around 5 percent of its gross national product on defense. It seems to me—and I am parochial on the matter—that this is a very modest investment of resources considering the size of the product, international conditions, the military threat, and our global interests. Over the last 4 years, U.S. strategy has worked out a relatively reasonable balance between our various global responsibilities.

In the process, however, our forces are tightly stretched and the level of our capabilities involves more risk than the Chiefs would prefer. In fact, we have testified for a number of years now that the risk is a great deal higher than we would like, Mr. Chairman, and certainly higher than we believe the leader of the free world should have.

Specifically, all of our Active and Reserve forces do not enjoy the same degree of readiness on an everyday basis. In the unlikely event that deterrence fails and we engage the Soviet Union worldwide, we will have to sequentially reinforce and defend the various theaters. We simply cannot do it simultaneously.

On NATO's central front, we may be forced to trade space for time or to consider resorting to the use of nuclear weapons, and I would be happy to elaborate on that in the questioning period if you would like. Neither of those options is very palatable.

At the same time, the United States is challenged to maintain a credible nuclear deterrent, a secure position in space, a supportive maritime environment, and strategically mobile ground and air forces. Further, Americans today expect their President to deal with regional conflicts quickly and effectively without losing people, either losing few people or no people, despite the fact that the Third World now possesses modern and sophisticated arms. And, believe me, that is a man-sized challenge, Mr. Chairman.

We have had 4 years of negative growth, 11 percent cutback. Last year we drew down combat units in every service. We are now at the point where continuing negative growth will have a disproportionate impact on capability and degrade our overall posture accordingly.

In a macro sense, it is a simple but fundamental fact that we cannot spend less and get more defense. My father used to tell about the man with the medical prescription that said, "Take one pill twice a day." And the man said that cannot be done. Well, we cannot get more defense for less money, Mr. Chairman. You have got to think about that a little while. [Laughter.]

Senator **Rudman**. It is a very slow committee. [Laughter.]

Admiral **Crowe**. We can throttle back in a smart or foolish fashion, but we cannot have more security in the process.

Similarly, it is vital to appreciate we can no longer be strong everywhere simultaneously. Last, sizable force reductions could very well generate some compression of our overseas posture—that is, forward-deployed units—and in turn less support for foreign economic policies, less influence with our allies in the free world, less ability to deal with crises, et cetera.

Even President Bush's amended budget, which resumes modest growth in fiscal year 1991, will pose some very trying choices. However, to ignore the President's request and adopt a long-term no-growth pattern or to fall below the amended budget would, in my view, be a very grave mistake, especially given the uncertain security environment we face at this juncture.

I would argue that it is extremely premature to say that Gorbachev will survive, to say that perestroika will succeed, to say that a START agreement will definitely be concluded, to say that an effective conventional arms pact is doable, to say that third-country terrorism will recede, or to say that the drug problem is in hand. Yet there are those who would jump to these conclusions in the rush to reduce spending.

There are a number of encouraging signs on the horizon. Our strength has been instrumental in helping to produce these developments and I strongly believe it will play a future role in influencing Soviet actions, for example. But to discard our policy of peace through strength just as it is beginning to bear international fruit makes no sense to me. Yes, perhaps the coming brave new world will offer genuine opportunities for reducing the military, but we should move as tangible evidence of change mounts and as our confidence grows, not prematurely.

Mr. Chairman, in the final analysis, my plea is that if we face a more confining fiscal climate that every effort should be made to look at the overall picture—the threat, the international situation, our alliances, the state of our forces, arms control goals—rather than viewing defense only through an accountant's green eyeshade.

That concludes my sort of brief summary of my statement, Mr. Chairman.

[The statement follows:]

STATEMENT OF ADM. WILLIAM J. CROWE, JR.

INTRODUCTION

Mr. Chairman and members of the Committee: I appreciate this opportunity to testify on America's military posture in connection with your hearings on the first defense budget of president Bush.

As you know, the President has modified defense fiscal guidance previously issued by President Reagan and initiated an interagency review of our national defense strategy. In turn, the Department of Defense is reworking programs to square with the new fiscal guidance. Until this work is finished and approved by the President, I will not be prepared to address in detail the Defense Budget for FY1990-1991.

I will proceed to discuss continuities, changes, and uncertainties in the global security environment, all of which will have a considerable impact on the strategic review. Additionally, I will go over the strategic and structural factors which led the Joint Chiefs of Staff to strongly recommend that spending for defense resume modest real growth by Fiscal Year 1991.

MILITARY STRATEGY AND POSTURE

To begin, our national military strategy is designed to safeguard and promote enduring national interests:

- The survival of the United States as a free and independent nation;
- A healthy and growing economy to provide opportunity for individual prosperity and a resource base for our national endeavors; and
- A vigorous alliance relationship to bolster forward defense of the United States and collectively maintain peace with freedom in the world at large.

These interests also describe our success as a nation: a representative government freely elected by the American people; a land bountiful in human and natural resources, a strong and diverse industrial base; a vast market for consumer goods; and the world's largest gross national product. No other country in the world has a better economic and competitive environment for pursuing individual and national endeavors.

BASIC OBJECTIVES

In early 1988, President Reagan submitted to Congress a report on national security strategy and, within this report, you will find two fundamental objectives:

- Maintain security of our nation and our allies by deterring aggression, repelling or defeating any attack should deterrence fail, and ending the conflict on terms favorable to the United States, its interests, and its allies; and
- Respond to the challenges of a global economy by heeding economic factors that affect our national security, tending to foreign sources of supply in critical areas, and limiting the vulnerability of our supply lines.

These objectives remind us that America cannot choose between military security and economic security. To underscore this point, our economy is irreversibly intertwined with a global network of communications, finance, petroleum, metallurgy, and merchant shipping--not to mention imports of industrial materials and machinery. To maintain a healthy and growing economy, we must use our military establishment to nurture a secure and supportive international environment.

Today, the United States is engaged in a complex array of international relationships and negotiations designed to promote a more stable world community and enduring peace, to reduce the level and lethality of world armaments, and to resolve festering regional conflicts. In some areas, we are making progress, but sound and durable agreements inevitably will require protracted and occasionally frustrating negotiations. This challenge undoubtedly will tax our initiative, resolve, and wits. I would argue as well that to maximize the prospects of success the President should be able to deal from strength.

MILITARY POSTURE

Meanwhile, our global military posture is designed to keep the peace, prevent small crises from becoming big ones, and deter major hostilities. In practice, we strive to maintain a healthy strategic and theater nuclear capability, field forces of high quality to offset numerically superior adversaries, exploit total force planning with our allies, and limit war reserve material to the time required by industrial mobilization. To effectively manage risks, this posture must be supported by a durable consensus on expenditures for defense.

Customarily, we do not keep all of our forces ready for combat on an everyday basis. Depending on the situation at hand, we plan to activate our Reserves and, if confronted with a major crisis, draw upon the full resources of our nation. Even with full mobilization, we are not positioned to defend Western Europe, Southwest Asia, and the Pacific Far East simultaneously against a major assault by the Soviet Union and its allies. Instead, we plan to deal with the various theaters sequentially depending upon circumstances and priorities at the time. These limitations obviously call for close collaboration with our European and Asian Allies.

SOVIET MILITARY POWER

Cutting across the strategic landscape is a more complex and challenging array of continuities, changes, and uncertainties associated with the evolution of Soviet military power.

LEGACIES OF THE PAST

Legacies of the past include a Soviet military posture designed to defeat every possible coalition apt to oppose the Communist State--plus strong military attachment to the principle that a good defense of the homeland will always require a strong offense terminating in a crushing defeat of the enemy. With this kind of thinking, it is not at all surprising that the Soviet Union has built the largest military establishment in the world.

Enduring elements of Soviet military power are well-known: robust capabilities in space, strategic and theater nuclear forces with intercontinental range, conventional ground and air forces capable of power projection across the entire Eurasian Continent, naval forces poised for the denial of Western sea lanes, and heavily armed surrogates near many of the world's oil fields and maritime choke points. Any U.S. military strategy must confront these realities.

The Soviet Union also towers above all other nations in the production of military equipment. Quantity is not the only worrisome part of this picture. For the last two decades, the USSR has been steadily closing the gap (relative to the West) in military technologies. For example, the Soviet Union is on a qualitative par with the U.S. in such deployed systems as surface-to-air missiles, anti-tank guided missiles, tactical ballistic missiles, short-range naval cruise missiles, communications, and electronic countermeasures. They hold an edge in anti-satellite systems, artillery, chemical weapons and mines.

UNDERLYING PILLARS

On the other hand, the underlying political, social, and economic pillars of Soviet military power are not in good shape. Part of the problem lies in 20 million members of the Communist

Party trying to govern the everyday lives of 280 million people and not doing a very good job of it. Lack of political cohesion also can be seen among ethnic minorities occupying territory and clinging to cultures predating the Communist revolution by 1000 or more years. Many of the nationalities are not emotionally attached to or inspired by the "Socialist Fatherland."

Today, Soviet leadership is beginning to understand that the nation's future depends largely on the productivity, initiative, and satisfaction of 130 million workers--not just party functionaries. In turn, State planners must improve the quality of consumer goods and services available to the Soviet people as a whole.

Compounding these problems is the Kremlin's central budget deficit, concealed from public view for many years. Investment increases are required in the energy sector to sustain economic growth, in food production to keep pace with population, in the machine tool industries to exploit new manufacturing processes, and in a wide range of government services including pensions, housing, and medical care. On top of these demands, the Kremlin is confronted with previously unprogrammed costs associated with disaster relief for the people of Chernobyl and Armenia. Yet, State revenues have sagged in the face of falling world oil prices (a major export).

Given these resource problems (more of which seem to surface every day), I was not surprised by unilateral force reductions announced by General Secretary Gorbachev last December. I was impressed by the size of these reductions (500,000 troops) and the time frame (two years) within which he intends to accomplish them. I suspect he must now let the internal wounds heal before going further, but I do anticipate more initiatives.

Meanwhile, the Soviet military faces challenges of a related but different order. Today, Minister of Defense Yazov and an increasing number of other leaders seem genuinely concerned about sagging patriotic support for the "Socialist Fatherland," recruits not prepared for the moral and physical rigors of compulsory military service, officers lacking "fatherly concern" for the troops, poor operational and technical discipline within the ranks, too much damage to combat equipment in the field, and lack of candor in readiness reporting.

Overall, the Soviet military establishment is having a tough time insulating itself from political, social, and economic problems cutting across the nation as a whole. By admitting that these problems exist, however, the Kremlin has taken the first step down a long and, I suspect, difficult road of shifting from quantity to quality in the structure of the Soviet armed forces. How this will affect their net military capabilities remains to be seen.

NET ASSESSMENT

Moving on to my annual net assessment, some preliminary words are in order about force reductions announced by the Soviet Union and its Warsaw Pact allies.

At the moment, the USSR and its allies are focusing on ground forces. If carried out, these reductions will affect the balance of land power in Europe and Asia. Opposite NATO's Central Front, Warsaw Pact reductions also represent a good down payment on Gorbachev's pledge to more toward a less offensive posture. We must, of course, verify and satisfy ourselves that these reductions actually occur in the time frame and on the scale promised by the Kremlin.

It's also important to note that much of the global military picture remains untouched by these Soviet reductions--for example, activities in space, strategic nuclear forces, strategic mobility, and support for states who sponsor terrorist acts. It is not clear yet whether maritime units will be included. Further, military balances in the Third World will be affected more by Soviet arms transfers than by reductions they plan in the Far East, Southwest Asia, or the regions opposite NATO.

Overall, I am less inclined than usual to predict the future military balance. However, the latest net assessment does provide a relative complete picture of where we and our allies stand today in comparison with the Soviet Union and its allies. While covering this ground, I will mention demands placed upon our combatant forces as well as their preparedness to deal with these demands.

MARITIME DEFENSE

As a member of the North Atlantic Alliance, the United States is pledged to defend the Atlantic and Mediterranean as a whole. This commitment is most challenging in the Norwegian Sea and the Eastern Mediterranean where the Soviets contemplate a campaign of sea denial. We are confronted with similar problems in the Pacific where Soviet naval power overlaps lines of communication to the Republic of Korea and Japan.

Today, we would fare well in this contest: a product of our nuclear attack submarines, carrier battle groups, maritime patrol aircraft, surface action groups, and replenishment units--plus support provided by our allies in the form of choke point control, mine clearance, land-based tactical aircraft, and especially naval escorts. All of this presumes high readiness and sufficient warning time to reach assigned operating positions before the outbreak of hostilities.

What happens in the Atlantic and Pacific remains very sensitive to our ASW posture. While making substantial investments in nuclear propulsion, quieting, and stand-off weaponry, the Soviets have not cut back sharply on their force of attack submarines--still over 300 in number. To confine this threat to home waters and to establish the needed control over vital sea lines of communication (SLOCs) will require an all-out effort by the bulk of our Atlantic and Pacific Fleets. Throughout, we must achieve high exchange ratios in the design and operation of our nuclear attack submarines. We also are counting heavily on our maritime patrol aircraft, active and reserve, to monitor approaches to the midocean SLOCs and to the United States itself.

On balance, the mobility and capability of our naval forces represent one of our greatest advantages vis-a-vis the Soviet Union and its surrogates. They will be useful in containing the Kremlin to a land campaign and in confronting the Soviets with a wide and unpredictable number of threat axes. Similarly, they buttress our ability to communicate with our allies and to project our own air and ground power in either major or limited hostilities or peacetime crises (e.g., the Persian Gulf). This is a flexibility the Soviets do not enjoy to the same degree.

STRATEGIC MOBILITY

The United States maintains strategic mobility forces to underwrite overseas treaty commitments and, at times, to keep small crises from getting out of hand in the Third World. For rapid deployment of troops, we depend largely on airlift. For tactical mobility on the ground (helicopters and vehicles), we rely on a mix of pre-positioned equipment, wide-bodied air transports, and sealift. Most of the follow-on ammunition and fuel will go by sea. Overall, we are well postured for contingencies short of a major war.

Soviet reliance upon strategic mobility forces is driven, in part, by the vast size of the country, marginal road and rail lines linking Russia to the Far East, and reliance upon regular military forces to deal with internal security problems. Both sealift and airlift support a steady stream of Soviet arms transfers to clients in the Third World. As seen in the Afghanistan campaign, Soviet air transports also can be used to project significant military power to adjacent countries.

Given a crisis involving NATO and the Warsaw Pact, the Soviet Union would have an initial advantage in reaching Western Europe due to short distances and a developed road and rail system. The Kremlin also has an advantage in merchant shipping which can be commandeered easily for military purposes. In contrast, we would have a tough time mustering the ships necessary to reinforce Western Europe in accordance with our goals--a consequence of insufficient capacity as well as ownership, flags, and ship crews shifting away from NATO to semi-industrial and non-aligned nations of the world.

Once hostilities commenced, the Soviet merchant fleet would find itself confined to home waters, bottled up in neutral ports, or otherwise out of action. In contrast, their strategic airlift provides a robust wartime capability to swing forces between the European and Asian theaters--all within Soviet airspace. This capability will improve substantially with the new AN-225 air transport which can lift some 500,000 pounds of cargo or twice that of our C-5B.

One other aspect of our mobility deserves comment. If fiscal realities were to require force reductions both at home and overseas, our mobility assets would become even more crucial. We would expect any scaled down forces to be able to deploy quickly and effectively through the globe, but this could only be achieved with adequate modernized lift.

SPACE

Over time, the United States and the Soviet Union have acquired a hefty reliance upon the space environment for communications, and intelligence in peace, crisis, and war.

By most measures--infrastructure, launch boosters and payload, numbers of space vehicles and sensors, and activities and time in space--the Soviet Union has a pronounced lead over the United States. In technical sophistication, miniaturization, and satellite reliability (or the time before normal decay in orbit), the United States still enjoys a comfortable lead. Thus, we do not have to launch as many satellites to keep the same number in orbit during peacetime.

In crisis or conflict, our chief concern is with Soviet anti-satellite systems, which place some of our communications and intelligence at risk. This is a main element of the military balance where we find ourselves lacking a deterrent. Yet, the credibility of our strategic deterrent and the effectiveness of our general purpose forces increasingly depend upon a secure position in space.

Overall, America does not need to match the Soviet Union by increasing its space launches, four-fold or its time in space three-fold. The U.S., however, does require significantly improved space launch capabilities. Moreover, we cannot tolerate a marked Soviet advantage in capabilities to destroy or disable satellites. Thus, I fully support a larger and less constrained investment in anti-satellite system by the U.S. Government.

STRATEGIC NUCLEAR FORCES

With respect to the strategic nuclear balance, neither the U.S. nor the Soviet Union have neglected investments in strategic warning systems, and both have a reliable and credible capability to detect preparations for an all-out nuclear strike, although our warning system is more sophisticated.

Each side does approach strategic nuclear parity in a different way. For its part, the Soviet Union has more balance in strategic offensive and defensive systems. Their TRIAD of land-based missiles, ballistic missile submarines, and bombers is complemented by substantial investments in leadership survival, strategic air defense, anti-satellite devices, and the world's only ABM system. In the Krasnoyarsk radar, they have gone beyond limits of the ABM Treaty.

Additionally, Soviet strategic offensive forces are more dispersed and hardened than those of the United States. In the case of ICBMs, they have exploited government control of vast lands within the Soviet Union and placed most of their missiles in very hardened silos or on mobile launchers. When it comes to military targets, our computer-supported analyses always show that Soviet ICBMs give the Kremlin a relative advantage in "damage expectancy." This lead means little, however, in the overall nuclear calculus.

For its part, the United States must maintain general nuclear parity with the Soviet Union by means of strategic modernization programs set in motion over the last decade: more firepower in the TRIDENT class submarine, improved accuracy and hard target kill capability in the submarine-launched D-5 missile and the land-based PEACEKEEPER missile, and the long range and high accuracy of air-launched cruise missiles.

These strategic modernization programs are "vital" as the Soviets continue to improve their active and passive defenses and, especially, as we move into a START regime. Beyond these weapon systems, our most pressing current problem is to resolve the mobile missile issue. Put bluntly, a healthy strategic deterrent is the cornerstone of our overall defense posture and compensates to a real extent for some of the shortcomings in our theater nuclear and conventional forces. It serves a similar function for many of our allies.

Further, research on the Strategic Defense Initiative serves warning that the United States will not allow the Soviet Union to monopolize the field of anti-ballistic missile systems and shows considerable promise for an ultimately non-nuclear defense posture.

THEATER NUCLEAR FORCES

Starting in the mid-1960's, NATO became increasingly dependent upon theater nuclear forces to compensate for conventional shortcomings and provide options short of a strategic nuclear exchange. The USSR responded in kind and eventually outnumbered the U.S. in intermediate and shorter-range missiles. The INF Treaty will eliminate these types.

Major asymmetries continue in short-range nuclear missiles, favoring the USSR. Additionally, NATO's practice of relying upon dual-capable tactical aircraft raises worrisome questions about the survivability and attrition of these assets at the outset of a conventional war. In part, we can hedge this risk by relying more on rear area bases or seaborne platforms (TLAM), but SACEUR genuinely needs a modern nuclear battlefield system as seen in a follow-on to Lance.

I also believe very strongly that NATO and the Pact have a shared responsibility to raise the nuclear threshold in Europe.

CONVENTIONAL FORCES

Today, America's conventional strength around the world is relatively adequate to deal with a wide spectrum of peacetime crises and limited contingencies. The most stressful and worrisome challenge, however, would be a full fledged conflict with the Soviet Union and, in turn, the task of defending NATO Europe alongside our allies.

NATO/Warsaw Pact

As a founder and member of NATO, America is committed to the forward defense of Western Europe and, if necessary, the restoration of allied territory. Only forces of the Warsaw Pact, led by the Soviet Union, threaten the territorial integrity of NATO Europe.

Over the years, no region in the world has been subjected to more military assessments than the Central Front of Europe. Results are fairly consistent--the deterrent stance of NATO forces has worked for forty years. Deterrence is, of course, a complicated and uncertain calculus with a high political and psychological content. In Europe, I believe it is fundamentally a product of allied political cohesion (who wants to declare war on 16 nations), America's global strength, the Free World's predominant economic position, internal problems in the Soviet Union, and the cutting edge of NATO forces positioned on the Central Front.

If deterrence fails and the initial defense falters, allied forces will face an unsatisfactory outcome: possible loss of considerable territory or, in the alternative, the prospect of resorting to theater nuclear weapons. In turn, we want to make conventional defenses as strong as possible to lessen the need to use nuclear weapons.

Countless studies and programs have addressed measures to enhance the conventional defense of NATO and reduce the prospects of a nuclear spasm. But today NATO is still not able to mount a genuinely effective conventional defense against a determined Soviet campaign. In the final analysis, only adequate conventional forces can offer an assurance against both aggression and the prospect of nuclear war, i.e., large numbers of well-trained forces, weapon systems capable of yielding high exchange ratios, tactical expertise in combining arms, adequate inventories of modern munitions, and sufficient combat logistics support.

At the moment, NATO defense planners are looking at high leverage technologies and a host of other measures to more effectively blunt the initial attack. Obviously this is the first order of business for an Alliance long preoccupied with deterrence. When it comes to defense, however, NATO's Central Region does not have the number of troops and weapons nor the inventories of preferred and common munitions necessary to prevail in a high intensity conflict of several months or more with the Warsaw Pact.

Of great concern is the possibility that NATO may not make the investments necessary to correct this situation. Perhaps, unilateral Soviet reductions or conventional arms negotiations will redress the balance, but it is much too early to rely on such judgments. In fact, experience would argue that the best way to bring the Kremlin's leaders to the table is to enhance your own strength. The most frustrating aspect of this picture is that the U.S. cannot solve this problem alone. Without allied cooperation and willingness to spend more, a successful conventional defense of Western Europe will be extremely difficult to mount.

Put simply, the most glaring weakness in our global posture is our inability to adequately defend Western Europe conventionally. This shortcoming does not necessarily mean that Europe is in immediate jeopardy or that our deterrent policy will be ineffective. As mentioned earlier, deterrence has a number of elements besides sheer military strength. It does mean that we should look closely at our overall policies and insure that we are realizing the highest return on our investment in terms of deterrence. This is especially important today as we confront the prospect of little or no growth in defense appropriations.

Having stressed NATO in order to note our most pressing military challenge, the following comments address other regions of special U.S. interest.

East Asia and Pacific

In the Pacific, forward-defense of the United States (Alaska, Hawaii, and the Marianas) is bolstered by our alliance with Japan. In turn, we are committed by treaty to the territorial integrity of Japan and by another agreement to peace and stability on the Korean Peninsula. To maintain a favorable balance of power in the region, we must protect lines of communication to China as well as Northeast and Southeast Asia.

Today, I judge the posture of U.S. and allied forces in the Pacific sufficient to deter the Soviets from a major attack in that theater and, if deterrence fails, prevent them from achieving their military objectives. The Republic of Korea is similarly equipped to deal effectively with any threat from the North that does not involve either the Soviet Union or the Peoples Republic of China.

Two words of caution are in order. First, the Soviet Union has been increasing the reach and firepower of its air and naval forces in the Pacific and supporting a general upgrade of tactical air forces by North Korea and Vietnam. Second, we are confronted with political pressures on bases in the Philippines. In short, we must sustain our air and naval strength in the Western Pacific and, at the same time, remain flexible on base options. This is not an easy situation to manage.

Southwest Asia

In Southwest Asia, U.S. security interests are tied closely to energy objectives--namely, access to oil at reasonable prices. The Persian Gulf has more reserves than any other region in the world, and no producer can lift petroleum out of the ground at less cost than Saudi Arabia and Kuwait.

Should the Soviet Union ever decide to co-opt the Gulf oil fields, their divisions and tactical air forces could overwhelm the regular troops of Iran, but they always have to worry about what happens next. Our gaming suggests, for example, that the Central Command (CENTCOM) can contest a Soviet military foothold in Iran and probably maintain some access to the Persian Gulf. When stiff resistance by the Iranians, multilateral responses by the West, and support by the Gulf Cooperation Council are added to the picture, the Soviets would be confronted with even more serious problems than they encountered in Afghanistan.

Again, the Kremlin cannot overlook the fundamental global strength of the United States. Even if successful in Iran or the Gulf, their progress would be limited to the water's edge and America's ability to project power would severely hamper Soviet use of captured oil facilities.

Latin and Central America

Turning to Central America, the situation is in a state of change. The five Central American countries recently have concluded an accord designed to bring democracy to Nicaragua and disband the Nicaraguan Resistance or "Contras." We are assessing the impact on the region and on our overall objectives. Up to now, Nicaragua has worked against peace with freedom in the region, virtually ignoring terms of the Arias Peace Plan. The burden of proof is still with the Sandanistas. Above all, they must respect human rights within their own country and stop interfering with their democratic neighbors.

Meanwhile, the United States is faced with a crisis in Panama and sagging confidence in leadership of the Panamanian Defense Force. A resolution will be painful and probably protracted as Panama sorts out its political and economic problems.

Concurrently, we are confronted with the illicit trafficking and production of narcotics in Latin America, posing a threat not only to the integrity and stability of governments to our South, but also to the social fabric of the United States itself.

Against this background, I much prefer to see a bipartisan agenda for the region and an enhanced security assistance program keyed to the everyday threat of low intensity conflict within the region. Over the next several years, however, America will have to rely primarily on its own forces to protect U.S. lives and property, improve air and sea surveillance of the Caribbean, fend off coercive moves by Cuba and Nicaragua, bolster U.S. commitments under the Rio Treaty, promote regional stability generally, and support the drug interdiction program. We are competent to do this, but it will take persistence, time and some reordering of our priorities.

INTERNATIONAL TERRORISM

Cutting across the international scene is a persistent threat of state-supported terrorism as seen in assassinations, kidnappings, hijackings, and bombings. While the Kremlin professes to have no interest in this form of coercion, some of its allies and surrogates remain deeply involved in the training, covert passage, and arming of terrorist groups.

In response to this threat, an ounce of prevention by civil authorities is worth much more than a pound of military cure. But it's very tough to provide a point defense of every public meeting place or conveyance. Thus, when and where it is possible to do so, we depend heavily upon our Special Operations Forces. In this regard, I can vouch for their professional expertise, but I cannot promise success in every instance. In fact, some acts of terrorism are so disastrous and conclusive that there is not much anyone can do to help after the fact.

Given these realities, I believe we must make terrorism more costly for the nations who support it. Our Special Operations Forces have a role in this process. In practice, we also depend upon our conventional military forces to send a strong message to states known to have a role in specific acts of terrorism, Libya being a noteworthy example. Sometimes the international community has accused us of being heavy-handed, but this must be weighed against no deterrent whatsoever to this form of aggression--normally conducted against innocent civilians.

PREPARING FOR THE FUTURE

At this point, many members of this Committee may be wondering how the U.S. Government cut $300 billion from the five-year defense plan contemplated in Fiscal Year 1985 and still managed to end the decade with a position of considerable military strength. Three factors account for this transition:

- First, President Reagan placed a high priority on the strategic modernization program, alliance commitments, and the everyday excellence of our combatant forces.
- Second, the Military Services postponed conventional force goals planned in the early 1980s, slowed down modernization programs, and cut back on the buildup of war reserve material.
- Third, our combatant forces continued to receive new fighting vehicles, combat aircraft, and naval warships funded during the FY1979-1985 defense buildup.

In essence, you may like many aspects of the foregoing assessment of current capabilities, but you must understand that this assessment is largely the product of defense investments made during the early 1980s. What happens in the 1990s is a function of spending for defense today. Consider, for example, the implications of two percent versus zero or less real growth in spending for defense over the next five years.

TWO PERCENT REAL GROWTH

With two percent real growth, as proposed by President Reagan, we could continue on course with our strategic modernization program, maintain a balanced conventional force, nourish research and development programs, and protect a combatant force of high quality.

We would not be able to replace major items of combat equipment on a one-for-one basis. This means, in effect, that the United States will be moving toward a smaller conventional force throughout the next decade. Granted, newer generations of combatant equipment may be more effective than the last, but we would not have the numbers of today.

Substantial trade-offs will be required in the aviation sector. The Army would have to reduce its helicopter fleet from 8500 to 6500 platforms; the Air Force would go from 37 to 35 tactical fighter wings; the Marine Corps would be cutting back on Av-8B and MV-22 (Osprey) procurement; and the Navy would rely on Reserves to man 2 of its 15 carrier airwings.

With respect to naval combatants, we would have to defer achievement of an amphibious lift capability for one Marine Expeditionary Force plus a Brigade until the late 1990s. The Fleets would remain short of AAW destroyers throughout the next decade, and we would go below 100 nuclear attack submarines while moving ahead with the new SSN-21.

Further, we will be right at the margin when it comes to protecting a force of high quality: military compensation barely keeping pace with inflation (not comparability with the private sector), more deferral of depot maintenance, a growing shortfall of base facility maintenance, and depletion of war reserve material in the interest of peacetime training and exercises. Obviously, these practices could not continue as an open-ended proposition.

These and other implications of two percent real growth can be found in the last annual report of Secretary Carlucci.

NO REAL GROWTH OR LESS

No real growth or less would pose even more serious and risky choices between competing priorities within the defense budget.

For example, if we place a high priority on strategic modernization, advancing military technologies, and the everyday quality of our combat forces, we will have in turn to cut back sharply on conventional force structure or current modernization programs. In either case, overall conventional military strength would go downhill.

All of this would occur at a time when we are trying to become less, not more, reliant upon nuclear weapons to deter on the Central Front of Europe and other forward areas. Further, we would not be able to stand fast while negotiating a reduction of conventional forces in Europe--unless of course, we are prepared to accept a marked and adverse shift in the Pacific balance of power.

Alternatively, we could try to nourish a supportive global security environment, hold the line on current commitments, and protect conventional force structure. In this case, we would have to postpone strategic modernization programs, cut back on research and development, and allow further depletion of our war reserve material.

Slashes of this type would translate into an aging TRIAD of strategic offensive forces and lower investments in the SDI--not a good combination in terms of deterrence or our leverage in START. Moreover, we would not be investing as much as we should be in conventional military technologies and our defense industrial base. Yet, we know that America's prowess in high technologies is the best hedge we have against uncertainties surrounding the evolution of Soviet military power.

Simply put, we cannot get more defense for less money. In fact, we are at a point where even small cuts in defense outlays will translate into disproportionate reductions in current or future military capabilities.

AMENDED DEFENSE BUDGET FOR FY1990-1991

Against this background, President Bush has issued new fiscal guidance to the Department of Defense calling for no real growth in FY1990 followed by 1 percent real growth in FY1991-1992 and 2 percent in FY1993. About $16.2 billion will have to be cut from the FY 1990-1991 budget submitted by President Reagan and over $60 billion from the five-year plan as a whole.

As you are aware, President Bush places a high priority on strategic modernization. Similarly, he agrees with the Joint Chiefs of Staff and the Combatant Commanders that we must nourish the everyday excellence of our military establishment. Thus, managing the initial decrement of $16.2 billion will require deeper trade-offs between conventional force structure and modernization.

Pending the strategic review ordered by President Bush, some argue that we should protect conventional force structure and take the cuts in procurement accounts. The resultant impact, however, will be less upfront funding and fewer benefits from multi-year procurement. More importantly, we will be confronted with further slippage in critical aircraft and missile modernization programs as well as additional backlogs in depot maintenance, etc.

If we concentrate the cuts on force structure, the question is where and how to do it. Some believe that we should stand fast in the forward areas and focus on our CONUS-based forces. Others argue the opposite case. In any event, saving money requires us to eliminate altogether some active units.

These simple examples illustrate the complexity and difficulty of the choices. Complicating the picture are the uncertainties in the international picture. Are we confident that Gorbachev will succeed, that he will survive, that START is a done deal, that regional instabilities will not persist, that the drug problem is in hand, that 3rd country terrorism is on the wane? I submit that it is premature to reach any of these findings. On the other hand, just as our "peace through strength" policy is beginning to bear fruit, there are those who would jump to these conclusions in order to save money.

A much more thoughtful way to do business would approach the problem carefully and scale down as our confidence increases. Most importantly, if we are forced to take substantial force cuts, the Congress would be well advised to dovetail these with progress in the arms reductions talks. It is with these kind of thoughts in mind that President Bush has ordered a broad based strategic review to examine our approach to the whole panoply of problems. This review is being conducted to make recommendations not only to the Executive branch but also to the Legislative arm.

It is clear at this point that with decreasing funds we cannot be strong everywhere, and we cannot continue to do what we do today effectively. This reality portends change perhaps in force structure or modernization or both. Certainly, to drop below the recommended budget for several years will require significant rollbacks and would mark a decreased departure from present security policy. Such a decision should not be taken lightly. Consequently, to get the most for our investment both in economic and strategic terms, we will be well advised to move gradually and to coordinate these moves with the international climate, i.e., Soviet moves, arms control progress, and allied relationships. To ignore these factors and to slash defense appropriations precipitately would be ill-advised at best and disastrous at worst.

CONCLUSIONS

In sum:

America will enter the 1990s spending little more than five percent of its gross national product on defense. This is a very modest investment considering the size of this product, the worldwide spread of commitments, the global foundations of our economy, the importance of a stable and secure international environment, diverse and recurring threats to the national interests, lingering concern about the evolution of Soviet military power, and a strong American interest in promoting freedom and democracy in the world at large. Every day, our nation benefits from a military establishment respected by friends and adversaries alike.

Over the last four years, the United States has worked out a relatively reasonable balance between our various global responsibilities. In the process, however, our forces are tightly stretched and the level of our capabilities involves more risk than the Joint Chiefs of Staff would prefer. Specifically:

- All of our active and Reserve forces will not be ready on an everyday basis to defend NATO, Southwest Asia, or the Pacific Far East against a major threat from the Soviet Union;
- In the unlikely event that deterrence fails and we engage the Soviet Union worldwide, we will have to sequentially reinforce and defend the various theaters; and
- On NATO's Central Front, we may be forced to trade space for time or to consider resorting to the use of nuclear weapons. Neither option is very palatable.

Concurrently, the U.S. is challenged to maintain a credible nuclear deterrent, a secure position in space, a supportive maritime environment, and strategically mobile ground and air forces.

While the time seems right to develop a more stable and sustainable relationship with the USSR, the U.S. and its allies must remain wary of Soviet military power. Even after unilateral force reductions announced by Gorbachev, the USSR will have an active military establishment in the neighborhood of 4.6 million personnel. Granted, the Soviets seem anxious to follow the INF Treaty with a START agreement and conventional force reductions from the Atlantic to the Urals, but little has concluded that we can conclude about. Further, it remains to be seen whether the Soviet process of substituting quality for quantity in armed forces structure will translate into reduced military capabilities. This is a critical transition we will have to watch and measure throughout the 1990's.

Today, the Department of Defense is challenged to provide more forward looking, fully integrated and fiscally constrained advice to the President and the Congress. Yet, civilian and military leaders in the Pentagon will never be able to deliver the goods without a durable consensus on spending for defense.

At this point, we cannot get more defense with less money. With the fiscal guidance of President Bush, we can move into the next decade with much of the military strength we have today. Granted, we may have to ease toward a smaller conventional force, but this will occur in a gradual fashion--not as a precipitous decline apt to undermine our alliance relationships, reduce our leverage in international negotiations, and cause massive turbulence in our military establishment.

At any level of spending for defense, we must protect a force of high quality--the backbone of our military strategy, our strongest card in crisis management, and the best hedge against uncertainties surrounding the evolution of Soviet military power. Quality requires more than the exploitation of advancing technologies; we must as well nourish the everyday excellence of our combatant forces and people.

In essence, Mr. Chairman, I have tried to arm you with my best estimate of what various spending levels will do to our military posture. You may decide that you want to spend less than President Bush has proposed, but I would urge you first to consider the entire picture.

ZERO GROWTH BUDGET

Senator INOUYE. It would be wonderful if we could view the portfolio of the Defense Department, not with the aid of a green eyeshade of an accountant, but by law and by the procedure in the Senate we are bound to do that. At the present time, for example, the CBO numbers seem to suggest that the OMB numbers instead of being zero growth would, in CBO calculation, be a 2-percent growth.

Senator BUMPERS. Mr. Chairman, if you would yield on that, I had understood it is $2 billion, not 2 percent.

Senator INOUYE. It depends on who you are talking with.

Senator BUMPERS. I was thinking the other day—and I certainly could stand correcting—when Mr. Reischauer testified I was under the distinct impression that he said it was $2 billion in excess of zero growth. Does anybody else have any recollection of that?

Senator RUDMAN. I was not at that hearing.

Senator BUMPERS. It is not 2 percent. Two percent would be a lot more money.

NATO'S NEW CONCEPT

Senator INOUYE. Two percent would be six. That is the numbers I saw. I hope they are wrong, but that is the whole problem. We have no idea where we are at this time.

We would be bound to follow the CBO numbers. Second, we still have not heard the second shoe drop on the savings and loan problem, and we have no idea what that will require of us. So somewhere along the line after the Secretary has been sworn in and the Bush administration plan has been fully submitted, we may be faced with having to look into the exercise of alternative plans or options of cutting down.

It is your opinion that at this stage we should not respond to NATO's new concept of weapons and Gorbachev's so-called perestroika peace plan?

Admiral CROWE. I am not sure what you mean by NATO's new concept.

Senator INOUYE. Well, NATO apparently is wanting to respond to Gorbachev. It would appear that they are talking about reducing their activities.

Admiral CROWE. I do not think—that is certainly not true as an alliance, Mr. Chairman. There are certain countries, of course, that obviously are cutting back in NATO. NATO has arrived at an agreed position to go into further conventional arms control negotiations [deleted] and I would strongly support that posture and I would hope that ultimately that will succeed. We have just commenced those negotiations.

That is one of my considerations in both my statement and my own personal thinking. It seems these are large stakes. They are important stakes, and the prospects are probably better right now for approaching conventional arms control negotiations than any time in my memory. But to predict the outcome and to act as if they were going to succeed and not to keep the pressure on I think would be risking a very, very fine opportunity.

Senator INOUYE. Right now what we have before us is the budget of the Reagan administration.

Admiral CROWE. I understand that.

Senator INOUYE. And we have been advised, I think correctly, that President Bush will be submitting his own.

Admiral CROWE. Yes. We are reworking that right now.

Senator INOUYE. Now to accommodate this so-called zero grow, what missions or commitments are we deemphasizing or relinquishing?

Admiral CROWE. I am not so sure I am in a posture to answer that definitively because the decisions ultimately are going to be the Secretary's and he is just in the Pentagon this afternoon. But he will be addressing that, I think with some urgency right away, and he has a lot of large decisions to make.

The services are preparing and are, I think, on the brink of submitting their proposals. Those will have to be reworked in the Secretary of Defense's office and we will solicit the views of the theater commanders and the Secretary will have to arbitrate these various decisions in order to get inside the President's priorities.

Senator INOUYE. So at this stage you do not believe that you can advise us of where the cuts may be made?

Admiral CROWE. I just do not know where the big decisions are and how he is going to come down on some of them, Mr. Chairman.

SMALL ICBM VERSUS MX

Senator INOUYE. Well, whatever the decisions are, one arena of contention will be the small mobile ICBM and MX rail garrison. What is your position on that?

Admiral CROWE. I have historically, Mr. Chairman—and when I say "historically," the last 1 or 2 years I have supported the rail-mobile missile, but let me tell you what my position is right now.

We have always said as the Chiefs that the Midgetman was probably the superior weapon system, but it was so expensive that it would just be difficult to sustain that position vis-a-vis the cost of the rail-mobile. But I think both systems are militarily meritorious. I think the basing of these systems has been around way too long as an issue. We cannot move into the START negotiations until we have resolved this issue.

We must know, first of all, if the United States is going to have a mobile missile and, second, what that mobile missile will be. It is sort of ridiculous to continue to pursue those negotiations without those questions being answered. We cannot answer those questions one way or another without a consensus. So I am for a solution that gets consensus on that issue.

We are looking in the Pentagon now to prepare for the Secretary's consideration and deliberations a variety of alternatives, ranging from no Midgetman with rail-mobile, or through several mixtures and up to the Midgetman the other way. We have in the last few months managed to bring down the costs of all these missile systems quite a bit, and I think that I would be inclined toward some variant that comes up with a package that is less than the 500 Midgetman missiles that were originally proposed and sends the 50 MX's we have now into the rail-mobile variant or alternative.

That cost will be more than the rail-mobile missile alone. This will have to be stretched out somewhat in order to get within whatever budget envelope we end up with. But political consensus is so important and moving ahead is so important that we are willing to do that.

Senator INOUYE. Some of us have been advised that the Pentagon is seriously considering a mix of something like this—50 MX taken out of their present silos and put into the rail garrison mode, that is $4.5 billion; 300 Midgetman running from $17 billion to $22 billion, somewhere between $22 billion and $27 billion total.

Is that one of the options?

Admiral CROWE. Yes, it is; my figures do not quite agree with that, but yes, that is one of the options.

Senator INOUYE. Is that the one that is being seriously considered these days?

Admiral CROWE. I cannot say anything has been seriously considered until Secretary Cheney has been consulted—I do not know what he is going to seriously consider, Mr. Chairman.

B-2

Senator INOUYE. If we come up with this sort of mix, do you believe under the present budget condition we can afford the B-2?

Admiral CROWE. We think we ultimately can, but obviously we cannot afford them all at once.

Senator INOUYE. What would you propose?

Admiral CROWE. I would propose prioritizing those—in other words, some kind of package that starts out solving our mobile missiles, stretching out the B-2 and coming on later. We cannot fund all those things in urgent fashion without emasculating our conventional forces.

Senator INOUYE. Should we proceed with upgrading the B-1 also?

Admiral CROWE. You are talking about the current problem with the B-1?

Senator INOUYE. The electronic problems.

Admiral CROWE. Yes. I would say we should, Mr. Chairman. I do not think those costs, though—we are talking world class here when we are talking about building the B-2 and all these other things.

Senator INOUYE. Obviously we will have to revisit this matter of the MX rail garrison and the Midgetman.

Admiral CROWE. And this will be extremely high on the Secretary's priority list to address very quickly.

Senator INOUYE. Since time is flying and the deadline is coming, the deadline that my colleague here has established for us, about when do you think we can get some definitive reading on this big ticket?

Admiral CROWE. Well, I am a little bit wary of predicting but I know that the Secretary is going to be addressing budget issues about the 3d or 4th of April. When he will review and how quickly he can decide, we obviously have to have some decisions in April.

In all fairness, we would like all the time you can give us just because of our circumstances in the Pentagon right now.

DOD BUDGET MARKUP

Senator INOUYE. Well, we have been told by OMB that they may need 90 days. I was just looking at the calendar. Ninety days puts us right against the wall there.

Admiral CROWE. Well, I do not think we are counting on taking 90 days. We do have a built-in problem in that the President has inaugurated this strategic review and of course all the services would like to see the strategic review completed before some of these decisions are made so we have some kind of framework in which to fit the decisions. But, frankly, that is a luxury we are just not going to be able to afford.

Senator INOUYE. I have many other questions, but we have colleagues here.

Senator Rudman?

Senator RUDMAN. Thank you very much, Mr. Chairman.

Admiral Crowe, let me just give you Senator Stevens' regrets and apologies for not being here. He is obviously one of the most faithful members of this subcommittee. Alaska is a long way away and he had had longstanding arrangements to leave for Alaska about this time. So he wanted me to apologize for his not being here to greet you.

Admiral CROWE. I understand.

STRATEGIC MISSILES

Senator RUDMAN. Admiral, I have several questions on the whole issue of the choices we make in terms of our strategic balance of offensive missiles, are the Chiefs working in concert with the arms control people in terms of the linkage between the verifiability problems that come along with a proliferation of a lot of mobile missiles as opposed to a large number of semifixed or rail garrison missiles?

Obviously, the more mobility, the more we get confounded by the other side, assuming they continue the kind of asymmetry they have now with our own forces. I just would like you to touch on that.

Admiral CROWE. I believe that we are doing the best that can be expected, Senator. We are again operating under a peculiar situation in that the Soviets have already put two mobile missile variants in the field. There is a reality that I might prefer was structured differently, but I do not have that choice. The missiles are [deleted]. But whether we like it or not, the world is in the mobile missile business.

Senator RUDMAN. That is right, Admiral Crowe, and I agree with everything that you have said, but let me just carry it a step. I guess what I am saying is that as you go through these very difficult choices and then we consult with you and hopefully come up with a consensus, which I agree you need, I hope that there will be sufficient connection between the arms control people at the State Department and the Defense Department on the assumption that one of the things that arms negotiators would like to do would be to try to remove as many destabilizing, hard-to-verify missiles as you can.

Admiral CROWE. You are absolutely right.

Senator RUDMAN. If that is our objective, then obviously in the short term we might want to put less resources into mobility, although I agree that is the real world, and be able to stage it in a way that we do not burn a lot of money off and we find out 2½ years from now that we are not going to use. Is that a reasonable position to take?

Admiral CROWE. I think the budgeting process itself, once you make the decision and we finally decide we are going to pursue a certain course, takes a long time. We have got a long research and development program ahead of us. We have got some other things before we actually field missiles, and I think the verification probably is going to be sorted out before then.

Incidentally, we have studied verification more than anything else on mobile missiles. [Deleted.]

Senator RUDMAN. I raise the issue only because I think it is absolutely imperative that to the extent that, on our side at least, we look ahead at what those issues are going to be.

Admiral CROWE. I will tell you right now I do not know exactly what the answer is going to be, [deleted].

When I was in Italy dealing with the Turkish nation and the Greek nation, I used to say when I made those decisions that if they were both mad at me I thought I was probably doing it just about right. When I was really worried was when only one of them was mad at me, and that is sort of the way this problem is.

Senator RUDMAN. I remember that very well, Admiral Crowe. I tell the committee I found myself one early morning on Admiral Crowe's airplane traveling between Italy and Turkey to watch Operation Determination Display and at that point the Admiral was on the radio talking to both the Greek Government and the Turkish Government, who were fighting each other at that point, and threatened to get out of the NATO exercise, and I recall you won.

Admiral CROWE. Temporarily. We won on that exercise, Senator, but it fell apart shortly thereafter.

Senator RUDMAN. Let me just continue and say on this point just one other point. That is, would you agree with me that although it is unlikely the Soviets are going to want to start destroying their latest deployment of missiles—and I would agree with that—that probably one of the best ways to improve the verifiability question with them, at least if their current state of mind is as I perceive it, is to commit to a large number of American Midgetman missiles? That would kind of bring them up short, would it not?

Admiral **Crowe**. [Deleted.]

Senator **Rudman**. This is a closed hearing. There is a certain advantage to that.

Admiral **Crowe**. Actually that pattern we have seen time and time again. If you really want movement on the Soviet side, the way to get it is to invest and let them know you are serious [deleted].

Senator **Rudman**. You make precisely the point that the spendout period is so long in this you make a commitment to that kind of deployment at this time and over the long term they do not know what is going on. We do not know what is going on inside the U.S. Congress, let alone they know what is going on inside the Congress. You do not know what is going on in here.

Admiral **Crowe**. I did not say that, Senator. I thought you knew.

NATO

Senator **Rudman**. Well, Admiral, this is a closed hearing. We really do not.

The point I want to make is simply that I think that in terms of getting arms agreements that will be verifiable quickly and getting the biggest threat they have to us out of the way, the best thing we can do is to make a major commitment early on, and I hope you will think about that also.

My last question and then I will hold myself to 7 or 8 minutes. Let us talk about NATO for a moment. I agree with you completely. I think that although we all hope that Gorbachev is what he appears to be, there is the serious question as to how far he goes before the Soviet military reaches out and says we have got security problems, how long the internal political structure in the Soviet Union will allow him to do it. It may be forever. Maybe he will win, an we hope so—if he is what he appears to be.

But is there not really an interesting conflict here in what is going on with the West Germans in terms of the security of Western Europe? If, in fact, we are going to have massive builddowns in conventional forces that tend to, at least, apparently decrease the offensive capability of the Soviet Union, nonetheless when we redeploy we deploy to the United States and they redeploy a short distance into their Soviet bloc area.

They could bring back their forces much more rapidly than NATO could, particularly the U.S. forces. Are we not really in a rather strange situation with the Germans in terms of the short-range nuclear missiles? Are they not absolutely necessary if this is going to follow?

Admiral **Crowe**. Certainly in the nuclear business until we have some kind of parity in conventional arms I would agree with that, Senator. That is an asymmetry that is built in. There is nothing we can do about that.

Senator **Rudman**. But unless they destroy those, Admiral, what concerns me is suppose Gorbachev says we are going to pull everybody back in and move them back and have a free zone while our people are at Fort Dix, NJ, until it closes, and the Soviets are 600 miles from the front with rail lines?

Admiral Crowe. But you should understand that the recent reductions, in all fairness, that he has announced, he says he is dismantling.

Senator Rudman. I understand that, but my question is what echelon of weapons he is dismantling, what echelon of forces he is dismantling. I just think people ought not to be taken in too quickly.

Admiral Crowe. I agree. We just cannot live with him just withdrawing, and we withdrawing. That is totally unsatisfactory.

Senator Rudman. We also have a serious problem with our NATO allies, do we not, about the modernization right now?

Admiral Crowe. [Deleted.]

Senator Rudman. But that is a very serious problem, that one?

Admiral Crowe. [Deleted.]

Senator Rudman. Thank you very much, Admiral Crowe. I appreciate it.

Senator Inouye. Senator Bumpers.

GORBACHEV'S INITIATIVES

Senator Bumpers. Admiral Crowe, I certainly subscribe to most everything in your statement. I think it is an excellent statement and realistic.

I must say just as a political statement I do not really understand why the President and even the Secretary-designate and others feel that we have to somehow or other proceed as though Gorbachev's speech at the United Nations is a gigantic trap being set for us. He has got big problems and, as you know, a lot of Sovietologists just do not think he will be around.

Admiral Crowe. Senator, I do not believe it is a trap. I certainly do not want to convey that.

Senator Bumpers. I know you do not, and I do not either. But some of these statements remind me, you know, of someone saying, "I am not ashamed to say I am an American." Well, nobody has accused anybody of being ashamed of being an American. You come from Oklahoma so you know what I am talking about.

Admiral Crowe. I have met a lot of Arkansas rednecks.

Senator Bumpers. It seems to me that, No. 1, Gorbachev is not doing this to accommodate us. He is doing this to accommodate an economy that is a basket case, and he has been very open and candid about that. I mean, here is a guy who is saying that this system—I mean he is saying it without saying it—that the economic theories of communism and, so far as that is concerned, the social part of communism, is an unmitigated disaster.

I frankly think he is in a league with Sadat, who went to Jerusalem. It cost him his life. It may cost Gorbachev his life.

Admiral Crowe. He is a very brave man.

Senator Bumpers. He is indeed. But my point is this. It seems to me that if you read history, Barbara Tuchman and people like that, you find that all the problems of the world are because we did not seize opportunities when they presented themselves. Now we are a big, grown-up nation. We are big boys. We have got a very fine defense establishment. We are strong strategically, though not as strong conventionally as you and I would like.

But we do not have to be naive, and we do not have to suggest unilateral disaramament. We do not have to do any of those things and pat Gorbachev on the rear and say we know you are not doing this to accommodate us but we still feel it sets the stage for some real progress in both reducing conventional weaponry, and I must say I think we were rather shocked at what they say they are willing to do in the conventional area.

Admiral CROWE. I would agree.

ARMS TREATY

Senator BUMPERS. And when it comes to strategic weapons, he has been so successful, certainly from a public relations standpoint, in convincing our NATO allies that they no longer represent the threat that they did that we are going to have one hell of a time modernizing the LANCE. I mean, there is no point in modernizing LANCE if we do not have any place to put it.

It seems to me that [deleted].

But my point is this. Gorbachev has his detractors at home. He is in a very precarious position every minute of the day. There are some small things. For example, what do we get out of violating the sublimits of the SALT Treaty by having 1,347 or 57 launchers instead of 1,320? Every defense agency from the CIA on down say the Soviets have been scrupulously abiding by that.

Admiral CROWE. Not scrupulously, but maybe generally.

Senator BUMPERS. They may be exceeding the 1,200 sublimit, for example, I recognize that, but I think that they would be happy to forthwith get below it if we would get below the 1,320 sublimit of SALT II. We do not get anything out of that. That decision never made any sense, and especially to start putting the cruise missiles on the B-52's to do it with.

I have sort of made a statement and you have been generally agreeing with it. Do you have any additional comments?

MARSHAL AKHROMEYEV MEETING

Admiral CROWE. I do. I spent a week last summer with Marshal Akhromeyev, incidentally, and he described' some of these reductions they were going to make. I was not surprised by the reductions that Gorbachev made because Akhromeyev had essentially told me they were going to make them. I briefed them around Washington. Everybody told me you do not believe that communist, do you? So I did not make much impact when I got back from this visit.

But there were some differences in what Akhromeyev said and what he actually did. I really believe our government has made a number of statements wishing Mr. Gorbachev well. I do not believe we have projected an image of being unduly obdurate. There are individuals who have, but as a government I do not believe we have.

There are some worrisome signs, though, on the horizon. I was told this week by a Soviet expert that came in to the JCS tank and talked to us for a while that Gorbachev had hoped to bridge over his near-term economic problems by encouraging small profitmaking businesses and giving incentives and so forth. That scheme has totally failed.

There are fewer private profitmaking concerns in Moscow today than there were when he first started.

Senator **Bumpers**. I had not heard that. That is very disturbing.

Admiral **Crowe**. It is disturbing and the reason is even more disturbing. The reason is that the Russian people just are not used to living with that, and as things get scarce—and incidentally there are a lot of scarcities developing in the Soviet Union because of these policies—the private businessman's prices go up for scarce items. The Soviets are not used to that, the Soviet citizens are not. That is not right in the way they look at the world. That is corruption and that is taking advantage of their situation. They have thrown bricks and protested and put a lot of these enterprises out of business because they just do not have the entrepreneurial spirit, I guess, in 50 or 75 years of communism it has sort of disappeared down the drain.

It is going to take a long time before that comes back. I find that a rather unsettling development. That, in all fairness, has not deterred Mr. Gorbachev. He is still hanging tough. He does have a lot of opposition. [Deleted.]

But there are some very serious problems facing Mr. Gorbachev. When I am saying the things I did about our timing should be watched, I am not wishing him ill, [deleted].

This Soviet expert, whose name is Chris Donnelly, a Sovietologist from the Soviet Union, probably the most knowledgeable man in the free world on the Soviet military, when asked directly what would happen next, he said, "Well, if we just go like we are doing, Gorbachev is going to reduce his arms some more." He says he needs an agreement and he needs it badly.

EXECUTIVE/LEGISLATIVE INTEGRATING

Senator **Bumpers**. I see in your statement where you think that is coming.

Admiral **Crowe**. I do; I really do. And I appreciate what you said, Mr. Chairman, about the laws and the deadlines and so forth, but I must tell you in all candor that one of my frustrations with the U.S. Government is integrating the executive and the legislative branch so that we work together on our longer term goals. I think we have some really promising prospects, [deleted].

Senator **Bumpers**. Admiral, if I may just interject at that point, I think one of the reasons we are slow getting off the dime in START is because this administration does not know what they want to do, and that is one of the reasons I do not personally feel any sense of urgency about this decision on the MX and the Midgetman.

Admiral **Crowe**. Well, there is one if you are going to go over and negotiate.

Senator **Bumpers**. That is my point. That is the urgency of it. If we are going to negotiate, we need to know what kind of a mix before we go in there that we want.

Admiral **Crowe**. I agree completely. I would urge you to settle that question forthrightly and quickly.

MX MISSILE

Senator **Bumpers**. I think the chairman asked you a question a moment ago about the possibility of the 50 MX, using the MX's we already have. I was opposed to the MX, not because it was not a good missile, but I was opposed to it because we did not have any home for it. And I still think that that was a very foolish idea, to put them in highly vulnerable silos.

But, in any event, I would like to pull those out. If we are going to build the MX, I still worry about the vulnerability of the rail-mobile system. I think there is a certain destabilization, there is a destabilizing part of that. I doubt that the Soviets could launch a preemptive strike in less than [deleted] which is what they say this rail-garrison MX will need.

But I think this. I think that if we have too many silo-based RV's and the rail-mobile out there and the rail-mobile is all we have, I think that is slightly destabilizing.

Admiral **Crowe**. Of course it is not all you have. You have a lot of mobile submarines.

Senator **Bumpers**. I understand that. Let me tell you, that brings me to my next question.

Admiral **Crowe**. But let me say one thing about that. I understand these academic constructs where we try and settle every uncertainty, Senator, but bear in mind the Soviet planner who is planning a preemptive strike against the United States must assume—he has no choice but to assume—that you are going to fire on warning. You are going to fire out from under him. Whether we are going to do it or not, he has got to assume that.

So a missile sitting in a silo is a threatening thing to him.

Senator **Bumpers**. You are looking at a guy who goes along with the hardliners on "no first use." I do not think we ought to ever renounce first use. I think there is a deterring influence of it.

Admiral **Crowe**. And I think a good missile and the MX is deterring. [Deleted.]

Senator **Bumpers**. [Deleted.]

Admiral **Crowe**. [Deleted.]

Senator **Bumpers**. [Deleted.]

Admiral **Crowe**. [Deleted.]

Senator **Bumpers**. Incidentally, I thought you were going [deleted].

Admiral **Crowe**. I am going June 12.

Senator **Bumpers**. Are you?

Admiral **Crowe**. Yes, I am—at least that is my plan.

Seantor **Bumpers**. Do you know [deleted].

Admiral **Crowe**. [Deleted.]

START TALKS

Senator **Bumpers**. Mr. Chairman, first of all, I really appreciate those comments, Admiral.

Mr. Chairman, just two quick questions. The thing that I am concerned about on the START talks—and I hope we can get them going; I hope we can make these decisions so we will feel comfortable going over there with what we think is the mix that we want—

but right now, as you know, the tentative agreement is to reduce the number of RV's by 50 percent.

Now that would mean that we will likely be permitted about 4,900, in the SLBM's and ICBM's. Now if we assume that we put 1,500 of those on ICBM's, that leaves us about 3,400 for SLBM's. Now you are asking for money for the 17th Trident in this budget. At 192 RV's per Trident, if we have 17, that gives us 3,264, just barely under the 3,400 that we would consider.

But the Navy is still asking for one a year through 1994, which would be 21. That would give us over 4,000 RV's, and we might very well find ourselves dismantling relatively new Trident submarines in order to reach the kind of mix that we think is in our best interests.

So that brings me to this question. I have always been a firm proponent of the Trident, as I have the B-2 until I saw the price tag on it—I have had second thoughts about my strong support for that bomber. Why would it not be wise for us, pending the START talks, to maybe slip a Trident 1 year until we see where we are going?

Do you follow all of what I am saying?

Admiral Crowe. [Deleted.]

Senator Bumpers. I would too, incidentally.

Admiral Crowe. [Deleted.]

CONVENTIONAL WEAPONS

Senator Bumpers. That is the way we got the Trident in the first place, was it not?

Finally, let me just ask you this question. Sam Nunn has always been, at least all of his speeches on the floor have been that we need parity in conventional weaponry in NATO and that if we do not have it, if the Soviets should come across central Europe, or wherever they decided to come across we could not stem the tide and, therefore, we have got to start to popping off nuclear weapons. I have heard Sam make that speech many times.

As strongly as I feel about conventional weaponry, I have gotten my rear beaten on the floor of the Senate more times than anybody in the Senate trying to stop something in order to put more money into readiness. Everybody talks a good readiness game around here, Admiral, as you know, but it does not always translate into action.

Just to be the devil's advocate, if we had a force that was actually superior to the Soviets or equal to the Soviets in quality, if not in quantity, so that we started pushing them back, is that not argument equally good on the other side? Is the nuclear deterrent on both sides not grounds for maybe not just going all out on conventional weaponry and trying to take advantage, especially now, of an opportunity to reduce those conventional forces facing each other?

Admiral Crowe. In Europe?

Senator Bumpers. Yes.

Admiral Crowe. You have got a lot of hypothetical assumptions in there, Senator. In my full statement, in which I do a net assessment, I deal with Europe in some detail, and I find Europe a terribly frustrating problem.

We do not need to worry about the picture you have painted there, whether we are going to be equal and superior—at least we do not need to be worried for a long time. We cannot get a decision out of 16 nations in Europe to do simple things, much less march to Moscow. Even if we were very superior, we just cannot get that kind of consensus. But that is not the problem we have got.

I do not look at it as parity. I would like to have sufficient forces in Europe that we can deter or keep the Soviets from taking Europe. [Deleted.] It is not a problem that the United States can solve alone.

[Deleted.] That is the big problem about Europe.

I have looked at it every way I can. Now I would not decry our presence in Europe. Frankly, it has been very successful and I think it has been instrumental and influential in getting Mr. Gorbachev to do what he is doing. It does other things for you. It is a very strong element in our political unity, and let us face it, the No. 1 deterrent on the Soviet Union is 16 nations arrayed against them. Nobody wants to declare war on 16 nations, no matter how well prepared they are.

But they are not well prepared against a determined conventional onslaught from the Soviet Union. They just are not. We are not.

SOVIET DEFENSIVE POSTURE

Senator BUMPERS. What evidence do you see of this highly touted Soviet moving into a defense posture?

Admiral CROWE. I am often asked that question. Frankly, we see very little, but I am not so sure we should be so hasty. To begin with, what do we see? We are seeing, over the last 3 or 4 years, some withdrawals of the forward deployments of the Soviet Navy. There is no question they are not as forward-deployed around the world as they were. We do not know exactly why that is. We have some good suppositions. I believe it is economically driven and also training driven.

They concluded that they did not get the training that they wanted when they were deployed. They sat at buoys and that was not a good idea. Now that they are home they have not dismantled those forces. The Soviet navy is training quite heavily at home. [Deleted.]

He made it clear that the Soviet strategy would be to go on the defensive and give the politicians and diplomats time to stop the war, and in 4 weeks if they did not stop the war they were going to go on the offense, which is not a lot different than what they are doing now.

He thought that was a great move. I did not take too much comfort in that. But he was genuine. He thought that was a big change and stressed it in a public speech at the Council on Foreign Relations in New York. They hammered him pretty hard on it, but at least he defended it with vigor. I think it came from his own mind.

We are seeing things like that. We have not seen these reductions as yet that were announced. [Deleted.] So we have got to be patient. If they are going to happen, you cannot see them right away. Now Gorbachev said 2 years. We have not seen any evidence of the production cutbacks that he announced, which I am very interested in.

But again you are not going to see that quickly. You have just got to get used to that. The world is not going to move as fast as we want it to. That does not mean they are not going to do it; it means that we just do not have any tangible or positive evidence yet.

Senator **Bumpers**. Thank you, Admiral. Thank you, Mr. Chairman.

Senator **Inouye**. Thank you.

Senator Cochran?

Senator **Cochran**. Mr. Chairman, thank you.

Admiral, I had not seen any of the reviews, but I wondered if you were satisfied with your performance last night on television.

Admiral **Crowe**. Well, not particularly, Senator, but Paramount gave $1,500 to the Navy Relief and I was satisfied with that.

Senator **Cochran**. It might help us get better coverage for our defense arguments by the networks later on.

Admiral **Crowe**. Somebody said they were not sure it was appropriate to appear on a comedy show in uniform, and I said they did not know anything about the Pentagon. [Laughter.]

SEALIFT

Senator **Cochran**. One thing that the commanders of the various regions when they have testified, CINCPAC mentioned it and I think our commander in chief of forces in Europe mentioned it, when they were before the committee was sealift and the deficiencies that exist in that area and the problems that we might have in that area if we had to try to move a lot of men and material in either direction.

I wonder, with that in mind, the perception that I have that we are really not able to construct a merchant fleet any longer. Our shipyard capabilities are deteriorating daily and we are building vessels only for the Navy now. What do you think can be done to deal with that problem? Is the Pentagon going to be recommending or is it recommending in its budget any new initiatives? Do you see any down the road where we are going to try to deal with this problem?

Admiral **Crowe**. Senator, we have been putting a rather heavy effort now for 8 years on sealift. Now it has not consumed our whole budget or anything, but I think we have invested in the neighborhood of $7 billion on the RRF and our own lift which we have for defense purposes. And we have considerably improved our ability for rapid reaction and responsiveness to move military things.

We will continue to put money into that in a graduated and consistent way. If the budget goes down, it will be less than we had originally planned. However, that will not solve the United States' problem. It will solve some of our military problems. But the basic fundamental problem the U.S. has with its merchant marine is much more extensive than that, and the Defense Department—and I think rightfully so—has always contended it cannot do that with its defense budget. It is certainly a commendable goal, but that distracts from what they are doing.

What I worry about is where we are really going to be affected by the shortage of merchant marine is in our ability to support this country in a war, not in the ability to get our troops to Europe. Granted if we had more merchant marine it would certainly help us with our military problems, but where it is going to be really serious is in the last 50 years we have become so interdependent with other countries and overseas products we, on a scale of about, I do not know what it is, 10 or 100, are a replica today of what Great Britain was in World War II.

Great Britain tried to wage a war, but at the same time they had to support their population with overseas imports, and we are in that situation here in the United States. Waging war is one thing; supporting this country economically is another, and, let us face it, we are not in a position to do that because of our merchant marine.

It is a big problem. It is an important problem. In war you do lots of things that are not done every day. [Deleted.] And that is just the way you wage wars. And we would patch and paste and we would solve some of these problems.

But I do not know if we can solve them all, and this country is just going to have to suffer. Those overseas things we depend on now are going to disappear in war, and our merchant marine is just in bad shape. That is really a crime in my view. We have done a great deal, though, on military transport and sealift, and we have improved that problem tremendously. It is a very, very serious commitment we have to reinforce Europe with six divisions in 10 days, and let me tell you that has a great deal to do with sealift.

But the reason it is so hard is that is a hard problem, no matter how many resources you have got. Ten days is ten days. That is 240 hours. We should not have made that commitment; it is that simple. [Deleted.]

PHILIPPINES BASING RIGHTS

Senator COCHRAN. This past January Senator Dick Lugar and I were in the Philippines. We visited some other countries in that part of the world. But one subject that was discussed at every meeting, just about, was the question of our bases in the Philippines and the fact that there is this framework agreement being developed.

I had a meeting this morning with our Ambassador there, who talked about the progress of discussions with the working group that has been appointed there in the Philippines to try to work out an agreement. I wonder what your view of that situation is and the extent to which we ought to invest funds as part of an agreement package in a situation that might be precarious or where we might have a risk of being ousted in some fashion, whether by just a denial of base rights because of a breakdown in the negotiations or the growth and effectiveness of the insurgency there in the Philippines that could lead to our not having acces to either Subic or Clark Air Force Base.

What is your attitude about that?

Admiral **Crowe**. Well, from a strict military standpoint, Senator, of course I would like to see every effort to save Subic and Clark. Those are the linchpins really of our forward deployed posture in the Far East. There are other things we could do. They would all be expensive, [deleted].

There are alternatives to the Philippines, [deleted]. Of course I think our obligation to the Philippines runs more deeply than just Subic and Clark.

The chairman is very familiar with that problem. We have a historical stake in the Philippines and, second, as an ally today we have a stake in seeing her survive as a democracy and thrive, et cetera.

[Deleted.]

Senator **Cochran**. Thank you very much.

Thank you, Mr. Chairman.

NATO REDUCTION IN FORCES

Senator **Inouye**. Thank you very much.

From what we gather, public opinion in NATO is favoring reduction in forces there. Even our most active ally, the Germans, have placed restrictions on low-level flight training and I gather that our exercise Reforger has been cancelled. There is talk about Members of Congress submitting a bill reducing our numbers by 25,000. I would think that realistically the time is coming when this committee and your shop will have to face up to how we are going to reduce our forces there.

Do you have any contingency plan for this?

Admiral **Crowe**. Could I just say one thing? First, Mr. Chairman, I do not think Reforger was cancelled; it was restructured.

Senator **Inouye**. It was not just cancelled?

Admiral **Crowe**. No; it was not just cancelled. We have redone it, obviously partially because of political pressure, but also some training improvements, et cetera.

On the general question of coming out of Europe, first of all let me say that the President as part of his strategic review is to address that question.

Second, we have got a lot of things that we think are very important to do, et cetera, but to get down to Mr. Bush's budget they are all going to be on the table in our own councils in the Pentagon. We are talking about getting down to zero real growth and that means that we are going to have to make some really painful, agonizing choices and some cuts.

And some people are going to say we should cut modernization and procurement and keep our strength and we should stay overseas deployed, and others who are going to say you should not do that. The strategic review will be helpful in making those decisions.

As I said in my statement, the prospects, if we can hang on here a little bit and things do firm up and our confidence grows, yes, of course we can make some reductions. We cannot reduce our forces very far anywhere without coming out of somewhere overseas. We have a rotation package. Our support base in the United States is such that whatever your presence overseas you have to have a sufficient and ample rotation base.

This idea of well, we will just reduce in the United States and not reduce overseas have very definite limitations. Yet you cannot support a reduction of a certain size if you reduce too far overseas. So the two have to go together. If we are going to reduce the size of our forces substantially, we will have to consider overseas cuts.

Now the idea that we can do that without any political problems is wrong. There will be some real political bullets to bite, and I said that in my statement, that if we do too much cuts we are going to have to compress the overseas structure and we are going to have to take the political flak. And there will be political flak.

There are many people, as you say, that would like to see a reduction in our presence. There are many more, and they are all the governments who do not want to see a reduction in our presence in NATO. If you were to walk over there tomorrow and say we are going to reduce, you will cause quite a serious problem.

My own view is that if we are going to do that, the groundwork should be laid. It should be done in coordination between the Congress and the administration. And we should try and relate it in some reasonable conceptual way to world events, to our economic situation, and to what they are doing with the alliance. This requires time, it requires thought, and it requires statesmanship. Otherwise we are going to pay a big political price.

Senator INOUYE. Thank you.

I will call upon Senator Harkin.

SOVIET LAND OWNERSHIP

Senator HARKIN. Thank you very much, Mr. Chairman.

This is not part of what I wanted to talk about, Admiral, but have you read the front page of the New York Times this morning, going along with what Senator Bumpers said about the Soviet system. They have now permitted individual farmers to put land in their name and pass it on to their kids, something that has been unheard of. Just check the front page

Admiral CROWE. I think Gorbachev should have started in that fashion first before he started in the cities. I think he made a mistake by starting in the cities first. The Chinese did it the other way around, started with the countryside.

Senator HARKIN. That is quite a change over there for them.

Admiral CROWE. There are things changing. There are fundamental changes afoot in the Soviet Union.

Senator HARKIN. It was an interesting article. You probably saw it yourself.

Admiral CROWE. No; I have not had the opportunity.

ASAT SYSTEMS

Senator HARKIN. Admiral, in your statement you basically said that we cannot tolerate a marked Soviet advantage in capabilities to destroy or disable satellites. It seems to me we are at the point right now of making two choices—to go ahead and build more effective ASAT weapons, which would stimulate an open-ended arms race, or to pursue arms control limits to the ASAT capability on both sides.

Would you agree that if we go ahead and start testing more effective low-Earth orbit antisatellite weapons and begin to deploy them, then the Soviets would abandon their 6-year moratorium and move ahead to more testing?

Admiral **Crowe**. The simple answer, of course, is I do not know, but I do not think that they would build. First of all, they would see what we were doing and how serious we were, and I think they would start testing what they have again. But I do not think they would go into any large effort. Certainly our experience does not suggest they would. Our experience in INF, our experience in the SDI business, our experience suggests that if you want them to seriously negotiate away ASAT's we had better get one or they will not do it, even if it is a modest one, just a modest one.

MIRV'S SYSTEMS

Senator **Harkin**. How about our experience with MIRV's, then? We had an opportunity at one time many years ago. We decided to go ahead and MIRV and they went right ahead and did it, too, and we still have not stopped that one.

Admiral **Crowe**. Well, I think we did not realize what the impacts of MIRV'ing would be.

Senator **Harkin**. I do not think we realize what the impacts of antisatellite weapons are going to be.

Admiral **Crowe**. I do not think we do either, Senator. If we did, we would have an ASAT.

Senator **Harkin**. I beg your pardon?

Admiral **Crowe**. I think if we understood fully what is going to happen in space we would not have this kind of vulnerability. We would not live with it a minute because if you are going to fight today you are going to have to have some help from space, and for one side to have space and the other one not to have it is tying a hand behind your back in the modern world.

Senator **Harkin**. All right. Let us look at that, then. The Soviets have, you said, advantage in capability, a marked Soviet advantage. Yet their ASAT capability has not been tested for over 6 years.

Admiral **Crowe**. That is correct.

Senator **Harkin**. It is low-earth orbit only.

Admiral **Crowe**. Which, incidentally, is most of our satellites.

Senator **Harkin**. I am going to get to that. It takes [deleted] to reach a satellite. It is only co-orbital They have a low capacity, [deleted] from two pads, which we know where they are and how to spot them. And, as I understand, they failed in [deleted] tests.

Admiral **Crowe**. It was about [deleted] percent success rate. It would not be quite that way; it would be the other way around.

Senator **Harkin**. Do you have a lot of confidence in that kind of a system?

Admiral **Crowe**. Well, [deleted] percent is pretty good if you have none. That is where the term "marked superiority" comes from.

Senator **Harkin**. But we have a lot of warning if they ever were going to do something about that.

Admiral Crowe. But what are you going to do about it?

Senator Harkin. The point being this, that if we go ahead and start to develop a more accurate, more speedy ASAT weapon system, nothing will deter them from doing the same thing.

Admiral Crowe. But suppose they do it, Senator.

Senator Harkin. What if we have an agreement?

Admiral Crowe. They do not want to lose their satellites either. All you have got is an impasse. Now you do not have an impasse.

Senator Harkin. But now you rely on your satellites, right? We rely on our satellites a great deal.

Admiral Crowe. Yes; we do.

Senator Harkin. We know they have a very low capacity.

Admiral Crowe. That is what worries me.

Senator Harkin. You mean you are really concerned about the few that they might be able to get in a couple of shots a day, taking [deleted] to reach a satellite with all that kind of warning that we have?

Admiral Crowe. I do not see what you mean by warning, Senator.

Senator Harkin. What I mean is——

Admiral Crowe. [Deleted.]

Senator Harkin. [Deleted.]

Admiral Crowe. [Deleted.]

Senator Harkin. I have been told that they [deleted].

Admiral Crowe. [Deleted.]

It is not as good a capability as they perhaps would like, but it is just a capability and we do not have anything.

LIFT CAPABILITY

Senator Harkin. Again, something has——

Admiral Crowe. We have another very strong deficiency, and that is that we do not have the lift and the responsiveness to replace our satellites in battle quickly.

Senator Harkin. Let me ask you this. Do you favor a world where both superpowers have hundreds of effective, quick acting ASAT weapons?

Admiral Crowe. I do not think we will have hundreds, Senator.

Senator Harkin. Dozens?

Admiral Crowe. If that means that neither one is going to use them, yes, I would favor it.

Senator Harkin. Then how about——

Admiral Crowe. I am sort of a believer in the deterrence school.

Senator Harkin. Would you favor a verifiable arms control treaty to ban all ASAT weapons testing?

Admiral Crowe. [Deleted.]

Senator Harkin. [Deleted.]

Admiral Crowe. [Deleted.]

Senator Harkin. [Deleted.]

Admiral Crowe. [Deleted.]

ASAT AGREEMENT

Senator Harkin. Have we attempted to reach any agreement with them on ASAT?

Admiral CROWE. I think we have talked with them, but I do not think we have pressed it hard.

Senator HARKIN. Why haven't we pressed it?

Admiral CROWE. We have got a lot going on. I have no objection to pressing it.

Senator HARKIN. This is what I see as a genie in a bottle, if I can use that old conundrum. Once it is out, just like MIRV's, it is going to be darn hard to put it back. But if we can put a stop to ASAT's now——

Admiral CROWE. You have got a problem on ASAT technology.

Senator HARKIN. Let me read what Brent Scowcroft said. "All scenarios involving the use of ASAT's, especially those surrounding crisis, increase the risks of accident misperception and inadvertent escalation."

Do you agree with that?

Admiral CROWE. Well——

Senator HARKIN. I will read it again.

Admiral CROWE. Please.

Senator HARKIN. "All scenarios involving the use of ASAT's, especially those surrounding crisis, increase the risks of accident misperception and inadvertent escalation."

Admiral CROWE. I would think the risk of accident, if they used them, would be pretty good.

Senator HARKIN. My point is that we rely a lot on our satellites. Right now the Soviets have an old ASAT system they have not tested for 6 years. Even at that point in time it was [deleted] percent, so you say it would have a [deleted] percent reliability.

Admiral CROWE. [Deleted.]

Senator HARKIN. But you would not have a [deleted] percent confidence factor in something you have not tested in 6½ years, would you?

Admiral CROWE. [Deleted.]

The only thing that I can see that maybe they are risking by not practicing is the ability of the kinetic energy system when they are in the vicinity to hit another target.

[Deleted.]

Senator HARKIN. No; that is not so. Is it not true the Soviets [deleted].

Admiral CROWE. I do not know that. It may be.

Senator BUMPERS. This is a top secret sensitive hearing. That is a fact. The Soviets [deleted.]

Senator HARKIN. I am sure you can always put someone up in orbit and then always chase down a satellite and do something with it, but those things take time. You have a lot of warning on that. What I see us moving ahead toward is a very quick-acting type of antisatellite weapons system, first low-Earth orbit, the next geosynchronous.

Admiral CROWE. That would be tough, expensive.

Senator HARKIN. They tell me that is what they want to do.

Admiral CROWE. That is not what we are asking for.

Senator HARKIN. But once you go to low-Earth orbit it is just a matter of a small amount of technology, as I understand it, to go to geosynchronous.

Admiral Crowe. But I am not so sure we are doing this just because we want to forge ahead in this race. I mean, we are trying to get some kind of modest capability that will act as a deterrent. That is what I am most concerned about. I hate to see them. It is just like CW.

Senator Harkin. Let me ask you this question. Would you favor a world where both superpowers had dozens of these effective, quick-acting ASAT weapons that could blind the opponent's reconnaissance satellites early in the war, or would you rather favor a world where both superpowers had hundreds of satellites in orbit with the capability of reconnaissance and detection early on? Which one would be best?

Admiral Crowe. Well, we are probably wedded to space more than they are right now, so——

Senator Harkin. So the satellites?

Admiral Crowe. Yes.

Senator Harkin. I think that is more stable. I think that kind of system lends itself to stability.

Admiral Crowe. Senator, I am not against these ideas or these ideal solutions. Reaching them has been, in my experience, just a tough proposition and it takes time.

Senator Harkin. Well, they have offered. I think we ought to reopen that door again, and I get more than just a little bit disturbed when people say we cannot do that.

Admiral Crowe. But I repeat again all the difficulties. Now we are dealing with a verification problem that is horrendous and it is nothing like this one is going to be. [Deleted.]

Senator Harkin. I am not willing to [deleted] but I am willing to put a verifiable ban on ASAT's that I believe could be verified.

Admiral Crowe. [Deleted.]

Senator Harkin. I do not think so. I think, for example, [deleted]. Satellites pick those up. Any kind of tests that are run with any kind of a rocket that goes up, it can be picked up by satellites. We know if you test. If you test ASAT, we have the ability to detect that. We know this. How do we know what the Soviets did? They have the ability also to pick up ours.

What I am saying is I believe, unless I am totally misinformed—and I do not think I have; I think I have got good staff that understands these systems—that we have that capability now of putting on a verifiable ban on testing of ASAT weapons.

Admiral Crowe. But that is not the objective here, is it?

Senator Harkin. Sure it is.

Admiral Crowe. Just to stop the testing?

Senator Harkin. Stop the deployment, but if you cannot ever test it, how are you going to deploy something?

Admiral Crowe. That is just what I was saying. [Deleted.]

Senator Harkin. Tell me how that comes about.

Admiral Crowe. Because [deleted].

Senator Harkin. That then would be banned under a verifiable ASAT ban, would it not, if it tracks down something in space?

Admiral Crowe. I say if you want to [deleted]. I do not know how you do that.

Now we are doing it in START. We are trying. So it may be worth the effort to do it and to try and reach these distinctions in negotiating. But it is pretty tough, particularly when you have got space proliferating like it is now.

WEAPONS BAN IN SPACE

Senator **Harkin**. Well, my goal, as you may have heard, I introduced a bill last year to ban weapons from space. I believe we are at that point that we can actually do that. I do not mean to wax philosphical, but ever since mankind has pushed outward from whatever country it was, man always took their weapons with them for two reasons—one, because they had every reason to believe there were people there who did not want them there; and second, they needed them for natural enemies.

This is one point. We are going into space. We do not have those two things, as far as we know. There is nobody out there waiting for us and we do not have any natural enemies out there. So we do not have to take weapons with us. Plus it is unique also in this way. There is only one way you can get there. So you cannot hide weapons on submarines, you cannot hide them by going through the jungles. There is only one way you can get in space.

You have to have a rocket. Now this is on down the road, but if you have a verifiable ban on weapons in space with open inspection of every lift vehicle, then you could absolutely assure that no weapons ever went into space because there is no other way to get them there. They cannot hide them anywhere.

If you accept the premise that every vehicle that goes up is fully inspected as to what is its payload, then this is unlike anything mankind has ever confronted before in the history of our outward exploration. We have never had that kind of a window that we had to go through. There is only one way to get there.

So if you can get that kind of verification, it makes it very possible that 300, 400 years from now, for our progeny in space, it will be an anomaly to have weapons. It will not be the natural thing.

If we can reach an agreement with the Soviets, then I think we ought to do it.

I think the space race on arms is wide open. You will never be able to verify it after that. So that is why I am so concerned about the ASAT weapons systems and why I have asked you and why I have asked every head of each one of the individual services that has been before us about their thoughts on ASAT and everyone, including you, have said, "Well, the Soviets have got it."

Admiral **Crowe**. Well, I have got a big practical problem, Senator. That is that if we fight a war I am responsible for defending our country and we are under a tremendous handicap if they can bring down some of our satellites at a crucial time. We cannot do anything about it, and we will be at a serious disadvantage on the battlefield.

Senator **Harkin**. I understand that.

Admiral **Crowe**. I do not think there is any question about that.

Senator **Harkin**. That is why I would not say we will let them have what we have and we do not do anything. I would say reach an agreement with them now—no more testing.

Admiral **Crowe**. I do not know what you do in the interim about my problem.

Senator **Harkin**. What is that problem?

Admiral **Crowe**. Well, to fight a war with a handicap.

Senator **Harkin**. We do not have the assets now anyway.

Admiral **Crowe**. We absolutely do not.

Senator **Harkin**. So what I am saying is, rather than rushing ahead to build these let us see if we can get the Soviets to agree on an ASAT ban.

Admiral **Crowe**. I say the reason I am not totally satisfied with that is that if I have to fight in the interim, I do not want to fight.

Senator **Harkin**. But in the interim you are not going to have it anyway.

Admiral **Crowe**. But I want to have them. If I have to fight, I want to have the ability to bring down their satellites.

Senator **Harkin**. How long is it going to take you to get that ability?

Admiral **Crowe**. Well, if you do not approve any money, it will take a long time.

Senator **Harkin**. But even if we approve the money?

Admiral **Crowe**. Well, I think we can get it pretty quickly. We think we can.

Senator **Harkin**. Months, years?

Admiral **Crowe**. [Deleted.]

Senator **Harkin**. I do not know what pretty quickly means. Give me some idea.

Admiral **Crowe**. I guess the answer is, I do not know. I would think 6 years.

Senator **Harkin**. Six years?

Admiral **Crowe**. I think this ASAT will take a long time to negotiate.

Senator **Harkin**. As I said, [deleted]. It seems to me with the right approach——

Admiral **Crowe**. We have been in INF for years and years and we are going to be in START a long time.

Senator **Harkin**. But, you see, it is harder to verify.

Admiral **Crowe**. [Deleted.]

Senator **Harkin**. What I said is that with our present satellite capabilities and other capabilities that we have we know if they ever test another ASAT weapons system. And they know if we ever do. It is fully verifiable. Therefore, if you have a ban you can verify it.

Admiral **Crowe**. I do not agree with that. I do not know what you mean by verifiable. [Deleted.]

Senator **Harkin**. If it is tested. I am just talking about testing.

Admiral **Crowe**. You mean blow it up?

Senator **Harkin**. If they test anything like that.

Admiral **Crowe**. The reason we follow the testing is so they do not put a co-orbital thing up and get in the neighborhood. We do not know whether they are testing or not. They just have not done that with that system, and we know that because they have not put it up there.

Senator **Harkin**. And we would know if they ever did.

Admiral **Crowe**. Yes.

Senator **Harkin**. That is why I say unless any of you have any evidence to the contrary on this it is my understanding——

Admiral CROWE. We do know that they plan to use it if they have to. They will accept the degradation of not testing—whatever that will be, whatever the degradation would be.

Senator HARKIN. Again, 6½ years just from everything I understand about it, it is just——

Admiral CROWE. But, as I say, many of the elements of the system are tested every day in other ways, but not all of it. Not all of it is tested, no question about it.

Senator HARKIN. Well, I think I have explored that point with you on that. As I say, in the interim if it takes 6 years, it would seem to me rather than rushing headlong down there that if we had some——

Admiral CROWE. We have put it off many years now. It is not exactly headlong, Senator.

Senator HARKIN. Well, you check and see if they did not offer to negotiate on that.

Admiral CROWE. You may be absolutely right.

Senator HARKIN. I think maybe we ought to pick that up again, because again I think you are the military strategist. I do not know that much about it, but everyone I have asked says that we depend more on our satellites for information, reconnaissance than they do. We really depend on those, and ours are better, I understand, much better in that regard.

Admiral CROWE. We are more sophisticated and the picture is mixed. Yes, we depend, I think, in a macro sense. Some things we get better and some things we do not have like theirs.

Senator HARKIN. But if we went ahead and developed it, they would go ahead and break out of their ASAT test moratorium and they would start testing again and probably start testing rather than the old slow system they have got—as I said, it takes anywhere from [deleted] to get a satellite—they would do a quick one just like we would be developing, and that would lead, I think, to gross instability rather than stability.

But again I am going back around the circle again.

Admiral CROWE. I understand.

Senator HARKIN. I do not want to take all your time. I am just going to keep raising the issue. Thanks very much, Admiral.

Thank you, Mr. Chairman.

Senator INOUYE. If I may just follow up, once we realize that the Soviets are carrying out an ASAT attack, do we have any countermeasures at this time?

Admiral CROWE. [Deleted.]

Senator HARKIN. You mean if they were to launch one of theirs to go after one of our satellites?

Senator INOUYE. Once we realize that they are carrying out an ASAT attack, is there anything we can do to counter this?

Admiral CROWE. [Deleted.]

LOW-ORBIT ASAT

Senator INOUYE. Would there be any advantage to developing the low-orbit ASAT but getting an agreement to ban the high orbit, which is easier to observe and verify?

Admiral **Crowe**. I would have to think about it, Mr. Chairman, I do not know. I have never really thought about it in that sense—whether we could, I do not know.

Senator **Inouye**. Then you might please him. It would be a partial banning.

SOUTH KOREAN DEFENSE

The South Koreans have 22 divisions, we have got 1. Your statement suggests that the South Koreans are doing very well. In fact, our commander there has suggested that the South Koreans are now capable of defending themselves. Our one division in Korea, is that a political presence or military presence?

Admiral **Crowe**. Well, it certainly has high political content, Mr. Chairman.

Senator **Inouye**. Would withdrawal of say a regiment have any impact?

Admiral **Crowe**. Politically or militarily?

Senator **Inouye**. Politically. Militarily I do not suppose it would have.

Admiral **Crowe**. [Deleted.]

Senator **Inouye**. From your standpoint and having been involved in negotiations and such with the Filipinos, what do you view as our prospects after 1991? Do you think we will be there?

Admiral **Crowe**. [Deleted.]

Senator **Inouye**. Has the insurgency problem there gotten worse since President Aquino's ascendency?

Admiral **Crowe**. [Deleted.]

600-SHIP NAVY

Senator **Inouye**. Is the 600-ship navy still a goal, or has that been set aside now?

Admiral **Crowe**. It is certainly not a goal in this economic climate.

15 CARRIER GROUPS

Senator **Inouye**. What about the 15 carriers?

Admiral **Crowe**. Those are the kinds of decisions the Secretary is going to be looking at right now, Mr. Chairman. Whether he can afford to keep those carriers or not is one of the major maritime issues. At least I would be urging him to look very carefully at that because the payoff on the carrier in the kind of world we are looking at right now is very, very high. I am talking about where these kinds of developments that we have earlier discussed take place and the threat level goes down in Europe and so forth. Obviously the major security concerns of this country are going to be Third World instability and regional instabilities, and our ability to react to crises and so forth, and the carrier is probably the best weapons system in our inventory for that.

You know, on the JCS, when anything happens—and I am not talking about a major confrontation but I am talking about the Persian Gulf, Southeast Asia, Central America—the first question that is asked is, where are our carriers and how far away are they and when can they get there.

They just give you a flexibility and a mobility and a capability that nobody else can match for getting to areas where we are not ashore, where we do not have a permanent presence.

Senator INOUYE. So in your mind it is a very high priority, then?

Admiral CROWE. That weapons system is, yes, but it is expensive and, like all other high priorities, it will be on the table when we try to meet these budgets. Meeting President Bush's zero budget is going to be very, very difficult for the Pentagon.

FULL BATTLESHIPS

Senator INOUYE. Are you supportive of continuing to maintain the full battleships?

Admiral CROWE. Well, they give us a capability we like and so forth, but again there will be tradeoffs. I do not know if we can afford those.

Senator INOUYE. As you know, I am very supportive of that. Tom Haywood and I got into a little conspiracy on that but we may finally get one of them.

Admiral CROWE. I used to be deeply involved in that development.

Senator INOUYE. I am concerned about the time element because of Gramm-Rudman, and I suppose we all played a part in this delay in the selection of the Secretary of Defense. Is there any procedure or process we can establish that would provide my staff and this committee something to work on while we are waiting for the official word to come to us? You know, we cannot come to a screeching halt and say, "OK, let us take a recess until 90 days have expired and then start working again."

Admiral CROWE. I do not think you will have the 90-day figure. I think you will have a lot you can work on a lot quicker than that, Mr. Chairman. What I would suggest is that I go over what you just said with the Secretary immediately and see what we can do to bridge this. It is a very real problem. I know that the Secretary will want to at least have enough specifics that you can start working on it at the earliest opportunity.

Senator INOUYE. Could you have your staff prepare for us a memo that we can look at, a memo that would have options that we may be looking at? For example, I would like to see the Congress make up its mind on mobile ICBM's. If you could submit to us alternative plans and provide us with the dollar numbers so that if we learn that it is going to be the 50 MX's out of the silos and put on rail garrison and 300 Midgetman we will know what we are dealing with and what you think would be not just the dollar figures, but what you think the impact would be if there was a reduction of, say, 10,000 troops from NATO, not just militarily, but politically.

I do not want to put you on the spot right now and give us the priorities, because you have not had the occasion to sit with the Secretary, but if you think there are options of any sort it would help us immensely if you could share them with us. At least we can be prepared as we move along, because I would hate to find this committee—and this is the committee, I am certain you realize, that will be the target. Any time any other subcommittee wants money, they are going to be looking at us, and they are going to be mentioning Gorbachev.

Admiral CROWE. I am sure you appreciate his dilemma in that he will be looking at these alternatives and he wants whatever decision he comes down on, he does not want to be making the case for other decisions in other fora.

Senator INOUYE. If you can tell the Navy to provide us with the best paper they can give us on the 15 carriers, because that is going to be a big one.

Admiral CROWE. We have a lot of information on that, Mr. Chairman, which I think we can furnish.

Senator INOUYE. I think that would be helpful.

[The information follows:]

REQUIREMENT FOR 15 CARRIER BATTLE GROUPS

The most compelling factor in determining our naval force structure, particularly our carrier forces, is the capability of our potential adversaries. The Soviet Fleet has grown into an offensive blue-water force capable of providing the Soviets with a truly global reach.

If the assumption is made that the Soviet threat, particularly in Europe, is diminishing, then the major security concerns for this country are Third World and regional instabilities and our ability to react to whatever crises might be engendered in these areas. The carrier is an ideal weapons system to both provide presence and to respond to these potential crises since it provides both flexibility and mobility.

Few other force requirements have received the extensive study and analysis given to the carrier battle group. We have long held that fifteen deployable carrier battle groups is a floor, not a ceiling, for required force levels.

A balanced force of 15 deployable aircraft carriers is necessary to maintaining the maritime superiority required to execute the national strategy developed by National Security Decision Directive 238. A force of 15 carriers is realistic and properly considers such important issues as geographic constraints, commitments to allies, and mutual defense. When viewed from a broader perspective, the size and composition of our naval forces reflect the theoretical results of numerous analyses and assessments, lessons learned from operational exercises and combat experiences, and the practical wisdom of supporting a two-ocean (truly global) Navy.

Global wargames/net assessment results have repeatedly verified that a minimum of 15 deployable carrier battle groups are required to carry out the CINCs wartime operational plans with an acceptable level of risk. This is likewise the minimum essential force level needed to meet national requirements for peacetime presence while still maintaining a reasonable perstempo. Any reduction below 15 carriers without a major reordering of our peacetime commitments will place an additional and (based on past experience) unacceptable strain on men and equipment.

Senator INOUYE. And maybe a paper on ASAT, because Senator Harkin, as you may have noted, will not stop on that.

So as we go along, if we could maintain some close liaison, it would be extremely helpful.

Admiral CROWE. We would be more than happy to do that.

[The information follows:]

ANTI-SATELLITE WEAPONS SYSTEM

It is obvious that the Soviet Union today maintains an uncontested advantage—vis-a-vis the United States—in the control of and access to space. Their massive investments in robust space-based surveillance, navigation, and communications systems, coupled with an operational co-orbital ASAT and several other systems with potential for ASAT capability, indicate clear intent to prosecute war fighting in space throughout the spectrum of conflict. I am convinced that these Soviet systems, current and future, will directly impact American and allied naval and ground forces worldwide should any level of conflict ever erupt between the superpowers.

To bring this strategic imbalance into equilibrium mandates that the United States develop and deploy an effective deterrent-in-kind ASAT capability; not for space supremacy or superiority, but to insure a measured, balanced response to Soviet space-based weapon systems and ASAT capability.

[Deleted.]

They are ready, especially with the co-orbital interceptor, to fight successfully. We have nothing approaching that capability—thus a US ASAT capability is essential.

It has been suggested that the Soviet co-orbital interceptor is not a threat because it has not been tested since 1982. I disagree. The facts clearly indicate that the system is a credible threat:

(1) [Deleted.]

(2) Component parts of the system—including tracking radars, launchers and launch systems, and on-orbit intercept techniques—are routinely practiced or employed in the Soviet's substantial space program.

(3) The SL–11 booster is the mainstay launch vehicle for the RORSAT and EORSAT satellites as well as the co-orbital interceptor. [Deleted.]

(4) [Deleted.]

(5) The co-orbital ASAT can inflict damage on any US and allied low-earth-orbit (LEO) satellite. Coupled with a high probability of kill and rapid refire capability, the co-orbital ASAT places critical LEO assets at severe risk (can kill 10 satellites in 2 days with their 16 vehicles). Even current US survivability measures cannot defeat this threat.

In summary, lack of a US ASAT capability, clearly focused on negating hostile LEO satellites or even the co-orbital interceptor itself, represents a serious war fighting deficiency.

[Deleted.] We cannot relinquish control of space to an adversary whose intent is clear. The United States must press forward with ASAT acquisition now.

[Deleted.] Such was the genesis of the U.S.-USSR ASAT Talks in 1978–1979 which were suspended after the Soviet invasion of Afghanistan. President Reagan's 31 March 1984 report to the Congress concluded, a comprehensive ASAT ban, the initial U.S. negotiating objective in the ASAT Talks, was not verifiable, could be easily circumvented, and was not in the national security interest of the United States. The study of space arms control issues eventually became an objective of the Defense and Space Talks. In fact, the Soviets pressed for a ban on "space-strike arms" from the outset of the Talks until the spring of 1988 when they dropped their proposed language.

[Deleted.]

Senator INOUYE. So that when the official word is received we are already moving; otherwise we will have to give up.

Admiral CROWE. I will also as part of this, if you do not mind, liaison in whatever we are doing with the Senate Armed Services Committee as well so that they will be aware of anything that we were doing.

Senator INOUYE. Well, I have appreciated this very much, Admiral. We have looked forward to this. It has been extremely helpful. I am going to tell the committee to study your statement very, very carefully. It is a broad and very realistic assessment of what is happening.

If I may, these are all the questions I would like to submit to you on different areas, and if you can set up this process of procedure it would be extremely helpful and I think mutually helpful.

Admiral CROWE. I really think we do have to work together, Mr. Chairman, because from everything I know it is going to be a traumatic year.

Senator INOUYE. Well, it is going to be a great challenge to all of us. I am going to go on my first journey, as you know.

Admiral CROWE. Anything I can help you with on Bahrain or the Middle East on your trip?

Senator INOUYE. No; I think everything is set up. I would like to thank the men and women under your command. They have done very well. We will be leaving here at 9 tomorrow morning, headed for Frankfurt, and from Germany we will go to Italy, and Italy to Turkey, then to Egypt and Israel, Greece, Spain, and back.

Admiral Crowe. I thought you were going to the gulf as well.

Senator Inouye. From Turkey to Bahrain. We will be spending a day-plus there. We will be on one of the ships there, I think the flagship.

Admiral Crowe. [Deleted.]

Senator Inouye. [Deleted.]

Admiral Crowe. [Deleted.]

Senator Inouye. [Deleted.]

Admiral Crowe. [Deleted.]

Senator Inouye. [Deleted.]

Admiral Crowe. [Deleted.]

You will find that, I believe, when you get there. You will see a lot of very good friends of the United States.

NAPLES HOSPITAL

Senator Inouye. We have already made one decision. We are going to replace your Naples hospital.

Admiral Crowe. I lived also in Naples, Mr. Chairman. I lived there 3 years, and that is a worthwhile move.

Senator Inouye. I gather it must be an embarrassment and a disgrace to us.

Admiral Crowe. Yes; I think it is.

Senator Inouye. Well, once again I would like to thank you for spending this time very patiently with us to share your insights into our problems. Needless to say, we will face difficult choices and I hope that we can make them together, keeping in mind the security of our country.

SUBMITTED QUESTIONS

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

Questions Submitted by Senator Inouye

OVERALL BUDGET PRIORITIES

Question. Overall Budget Priorities. To accommodate a zero real growth defense budget, which missions or commitments would you recommend be deemphasized or relinquished, and where overseas would you recommend that any force structure reductions occur?

Answer. As I stated before, budget levels at or below zero real growth would pose even more serious and risky choices between competing priorities within the defense budget. As you are aware, the President has ordered a broad based strategic review to examine our approach to the whole panoply of problems. This review which encompasses your question is being conducted to make recommendations not only to the Executive branch but also to the legislative arm.

STRATEGIC NUCLEAR MODERNIZATION BUDGET PRIORITIES

Question. Last year, you told the Senate Armed Services Committee that, based on the additional cost of the Small Mobile ICBM in a tight budget environment the Joint Chiefs concluded that the cost differential between Small Mobile ICBM and the MX/Rail Garrison would require an unacceptable diversion of funds from other critical strategic and conventional military programs. Why isn't this still the position of the Joint Chiefs, considering that the budget environment is even more tightly constrained now?

Answer. We have always said as the Chiefs that the Small ICBM is a particularly valuable weapon system, but it is so expensive it would be very difficult to deploy when compared with the cost to deploy the rail garrison Peacekeeper. Both systems are valuable from a military standpoint. I think the basing of these systems has been the real issue on ICBM modernization, and that it has been an issue much too long. We must know, first of all, if the United States is going to have a mobile missile and, secondly, what that mobile missile is. We cannot answer these questions one way or another without a consensus. So I support a solution that gets consensus on that issue. I am ready to move ahead on this consensus as soon as it is achieved.

Question. In considering budget constraints or reductions, in your personal, professional military opinion, how would you rank your priorities among the following strategic programs: (A) MX/Rail Garrison; (B) Small Mobile ICBM; (C) B-2 bomber; (D) fixing the B-1B bomber's electronic countermeasures systems; and, (E) SDI funding in fiscal year 1990 at more than a zero real growth level?

Answer. Strategic modernization is vital to ensure future deterrence in light of the continued improvement of Soviet strategic capabilities and especially as we proceed toward a START regime. The programs you mention are all related to strategic modernization. All are important to the successful completion of that modernization and it is difficult therefore to say that one should have priority over another. Having said that and recognizing the fiscal realities with which we are faced, I would propose a prioritized package that starts by solving the mobile missile issue. The Chiefs and I have been consistent in assessing the Small Mobile ICBM as a superior weapon system but with a cost comparatively too high vis-a-vis MX/Rail Garrison. Both systems would be militarily effective. I would be inclined towards some variant that is a combination of both systems if that is what is necessary to gain the consensus to make a decision. Development of the B-2 should continue, with the program modified to fit into the overall budget picture in relation to the mobile missile decision This will result in some stretch out of that program. As a separate issue, we need to proceed with our planned upgrade of the B-1B to solve that aircraft's electronics problems. With regard to SDI, I continue to support a program to conduct vigorous research to demonstrate technical feasibilities but I consider it prudent to refrain from rushing ahead with the program while the technology and engineering are still emerging.

Question. It has been suggested that the technology and production readiness of the STEALTH bomber is immature. Without mentioning special access information, what is your assessment of the technological and production readiness of the B-2?

Answer. There are no known technological problems with the B-2. Both the low observables technology and the flying wing design used by the B-2 are well understood. We have, however, encountered some minor technical difficulties that are typical for any aircraft in this state of development. Examples include turning a computer on and having a circuit breaker trip, or forcing air through the Environmental Control System at 150 percent of load capacity for test purposes and having a duct blow out, or having a microswitch bracket fail after repeated use. While these kinds of problems are neither exceptional nor distressful, they did require resolution, and others similar to these could occur as testing progresses. Thus far, no technical difficulty has impacted the producibility of the aircraft. To ensure a smooth transition from development to production, we conducted normal Production Readiness Reviews prior to beginning Low Rate Initial production (LRIP). We concluded the LRIP contract for the next five aircraft nearly a year ago. Those who point to immature production readiness of the B-2 are most likely unaware of our experience with the technologies and the deliberate production planning that have gone into the B-2 program.

Question. What do you consider the key unanswered questions about SDI, and what are the principal uncertainties about cost which are the foundation of your concern about affordability and cost effectiveness?

Answer. I continue to support the SDI Program in its efforts to conduct vigorous research to demonstrate the technical feasibility of both space- and ground-based defenses while providing the flexibility to adjust the specific deployment schedule as evolving technology is tested and proven. Although the program has made important progress in R&D of relevant technologies, there are still many unknowns, and it is too early to make choices between candidate systems. At this stage, we need to keep all options open and concentrate our efforts on those required critical technologies which are least developed and which have significant risk. The Strategic Defense Initiative Organization (SDIO) has identified four critical areas of program risks; they are: (1) The survivability and affordability of the space-based elements, both sensors and weapons, (2) Midcourse detection, tracking, and discrimination of incoming enemy warheads, (3) The affordability of a terminal interceptor and support sensors, and (4) The overall system effectiveness in a nuclear environment. Ongoing cost reduction efforts are concentrating on optics, focal plane arrays, materials and structures, signal processing, and space power. The challenge will be to overcome these program and cost risks while continuing to satisfy the operational requirements the Joint Chiefs of Staff have established. I am confident that the SDIO can meet this challenge given adequate time and resources. I also consider it prudent to not rush ahead with the program while the technology and engineering are still emerging.

U.S. OVERSEAS FORCE STRUCTURE—BUDGET CUTTING PRIORITIES

Question. How could force structure changes overseas be accomplished with the minimum impact on the national security of the U.S. and its allies?

Answer. As I have stated before, if we are forced to take substantial force cuts, we would be well advised to dovetail these with progress in the arms reductions talks. It is with these kinds of thoughts in mind that a broad based strategic review is examining our approach to the whole array of problems to include the forward basing and burdensharing issues. This review is being conducted to make recommendations not only to the Executive branch but also to the legislative arm.

It is clear at this point that with decreasing funds we cannot be strong everywhere, and we cannot continue to do what we do today as effectively. Generally, any overseas force structure reductions, if required, should be made gradually. Certainly, they must be coordinated with the international climate, i.e., Soviet moves, arms control progress, and allied relationships so as not to undermine our alliance relationships, or reduce our leverage in international negotiations. Further, we should consider the ability of the Department of Defense to manage such change.

U.S. OVERSEAS FORCE STRUCTURE—BUDGET PRIORITIES—KOREA

Question. Relatively speaking, your net assessment of the security on the Korean Peninsula is quite positive. It also has been estimated by knowledgeable defense planners that, within the near future, the military balance between North and South Korea will be such that the U.S. and its South Korean allies can consider altering the level and composition of U.S. forces stationed there.

Considering South Korea's steadily improving military capabilities, why shouldn't the U.S. be able to withdraw significant numbers of ground forces from that nation?

Question. The Commander of U.S. Forces, Korea, and of the Korea-U.S. Combined Forces Command, General Louis Menetrey, told this Subcommittee about three weeks ago that South Korea's forces are capable now of defending the country. If so, doesn't this situation give us the opportunity to adjust our troop levels there at this time?

Question. Admiral Crowe, South Korea maintains 22 divisions, while the U.S. maintains one division—the 2nd Infantry Division. Our division would fight under the direction of a South Korean Corps in wartime.

In terms of combat capability, how much difference does the 2nd Infantry Division make to the wartime military balance on the Korean Peninsula?

Answer. Our assessments do indicate that South Korean forces are capable of defending themselves against any threat from the North that does not involve either the Soviet Union or the Peoples Republic of China. Consequently, from a purely warfighting perspective, withdrawal of some US forces from South Korea would not seriously change the equation.

However, forward deployed forces in the Pacific, or any theater, for that matter, provide more than warfighting capability. They provide alliance cohesion, deterrence, regional stability, and a basis to influence regional events. In addition to deterring aggression they convey a degree of resolve, commitment, and steadfastness and enable the ROK to confidently enter into any South-North dialogue.

US forces in Korea also provide stability to the entire Western Pacific. They provide a degree of flexibility and increase US options within the theater. Withdrawal could weaken the bonds that maintain cohesive alliances and could cause friends and allies to reevaluate their positions relative to internal and external threats.

Economic and political conditions are changing rapidly throughout the world. Countries within the Western Pacific, in particular, are increasing in economic strength and influence. Any withdrawal of US forces must be carefully and deliberately considered to avoid instability.

U.S. OVERSEAS FORCE STRUCTURE—BUDGET CUTTING PRIORITIES

Question. Some members of Congress have announced their intentions to introduce legislation requiring the withdrawal from NATO Europe of about 25,000 U.S. military personnel. If a withdrawal from NATO Europe of some U.S. military personnel is to occur in fiscal year 1990, how should such an action be accomplished, and what number of troops, to minimize its impact politically and militarily on the NATO Alliance?

Answer. As you know, the current budget submission includes removal of Army forces associated with the INF Treaty reductions from the force structure. Roughly half of that reduction will come from Europe. USCINCEUR has indicated he needs to use the remainder of his INF related manpower authorizations to correct well-established personnel shortfalls in other critical functions, to include Combat Support and Combat Service Support.

Even if announced Warsaw Pact force reductions take place as scheduled, a significant imbalance will remain. Efforts to engage in a unilateral withdrawal in Europe undermine NATO's strategy for Conventional Forces in Europe (CFE) negotiations that have already begun and are making progress. Alliance solidarity, crucial to the success of the INF negotiations, is critical to the CFE process as well. Warsaw Pact incentives to negotiate seriously are reduced if they believe that the U.S. can be made to unilaterally reduce. While we are encouraged by recent Soviet and Warsaw Pact announcements and are looking hopefully toward the negotiations this summer, we must guard against quick judgments influenced by euphoria. If the Soviets are as serious about wanting peace as they say they are, it will show in the negotiations, and then we will be able to readdress our European troop strength requirements.

ANTI-BALLISTIC MISSILE TREATY ISSUES

Question. The Joint Chiefs reportedly opposed a last minute attempt by some in the Reagan Administration to declare that the Soviets were in a "material breach" of the Anti-Ballistic Missile (ABM) Treaty. The Chiefs reportedly believe the Soviets are in a much better position than the U.S. to deploy conventional ABM systems nationwide if the treaty's limits are weakened. Do these statements still reflect the Joint Chiefs' position?

Answer. During the U.S. Government's deliberations in preparation for the 1988 ABM Treaty Review, the Joint Chiefs of Staff and other agencies expressed their views as to how the U.S. should respond to the Krasnoyarsk radar violation. Taking these views into consideration, the President did not declare a material breach, but established the publicly stated position that the U.S. would have to consider doing so if the Soviets continued to fail to resolve this violation. The issue has not been formally addressed by the Joint Chiefs of Staff since then.

There are existing asymmetries in U.S. and Soviet strategic defenses. The Soviets have established an infrastructure that includes a deployed ABM system around Moscow and the production facilities for that system. That infrastructure places the Soviets in a better position to expand their ABM systems if the treaty's limits are weakened. Such an expansion, however, would be very costly and is therefore considered unlikely.

GORBACHEV INITIATIVES—IMPLICATIONS AND RESPONSES

Question. Admiral Crowe, you have said that the force reductions announced by the Soviet Union and its allies, if implemented, will affect the balance of land power in Europe and Asia. Other U.S. experts have given more conditional assessments. What specific evidence do you have about the details of Mr. Gorbachev's proposals which would support your assessment?

Answer. Until we see the final disposition of removed equipment and the resulting reorganized force structure is known, a conditional response to this question is all that is possible. Nevertheless, if the Soviets destroy 10,000 tanks, among other things, west of the Urals, as they have claimed they will do, this will de facto affect the land power balance in Europe. Promised reductions in the Asian portion of the U.S.S.R. would, of necessity, also affect military balances. The net result of the Warsaw Pact reductions will be the near removal of a short-warning, unreinforced attack into Western Europe as a plausible option. However, given the overall size of the Soviet Armed Forces, the capability to conduct a fully prepared attack remains after a period of preparation and reinforcement.

Question. Admiral, you have testified you expect more initiatives from General Secretary Gorbachev relating to the size and structure of the Soviet military.

What additional initiatives do you expect, and in what timeframe? How would these initiatives affect the military balance between the United States and its allies and the Soviets and their allies?

Answer. We do not have specific information that additional initiatives will be announced. However, doctrinal and force structure questions are still being debated within the Soviet Government, and resolutions to these debates will unfold over time. In addition, DIA does not rule out General Secretary Gorbachev making further dramatic announcements to further the Soviet political agenda; for example, the Soviets may make gestures regarding short-range ballistic missiles to pressure the West for negotiations on these assets, and may expend additional public relations efforts to support Conventional Forces in Europe (CFE) arms control proposals.

Question. Mr. Gorbachev said it would take 2 years to implement his initiatives. How long would it take for them to be reversed? At what point in the implementation of the initiatives may we be confident that the reductions/restructuring are not easily reversible and that we can safely modify our own forces and defense budgets?

Answer. Given the Soviet need to reacquire equipment, integrate it, and train personnel, a rule of thumb might be that the same amount of time expended on reductions/reorganization would be needed to reverse or counteract these changes. However, it would not lead to the conclusion that the currently announced Warsaw Pact reductions, even when well underway, are of such a magnitude and character as to deserve being directly tied to U.S. decisions about forces and budgets.

Question. Do the initiatives, if implemented fully, affect Soviet capabilities to conduct simultaneous theater operations in Europe, the Far East, and Southwest Asia? Do they affect Soviet abilities to maintain control over Eastern Europe?

Answer. First, it should be noted that simultaneous offensive operations in multiple theaters have never been a Soviet preference, and that reductions would decrease Soviet capabilities to conduct sustained offensive operations in multiple theaters. Indeed, against a capable potential adversary such as China, changes suggested thus far would inhibit the prospect of offensive operations. The promised changes in this region include the removal of divisions from Mongolia and general personnel reductions. They also include a reduction in firepower and mobility of maneuver and artillery divisions. As for Soviet reductions Jeopardizing Soviet control in Eastern Europe, although the Soviet military is the ultimate guarantor of Soviet dominance there, Soviet units have never explicitly functioned as an occupying force, and a removal of six divisions from this area will not create a perceptible change in circumstances. Ferment in Eastern Europe will be much more a product of political processes.

NET ASSESSMENT ISSUES: NATO/WARSAW PACT

Question. Your net assessment of the relative military capabilities of NATO and the Warsaw Pact is quite sobering. Do our allies with whom you have shared these conclusions agree or disagree with them? If you have not shared-this net assessment with them, especially at the highest political levels, would it be to our overall advantage to do so in an effort to obtain increased allied defense burdensharing?

Answer. I have not shared the specific conclusions of the 1989 Joint Military Net Assessment (JMNA) with our allies—primarily because the document that contains those "sobering" conclusions is classified TOP SECRET and is not releasable to foreign nationals. The unclassified version, by its nature, does not disclose those same conclusions in a fashion sufficient for the purposes described above—to convince our allies to increase their share of NATO's defense expenditures.

Our latest net assessment is a military net assessment, prepared from a US perspective. Our allies' interests in military capabilities is different in two respects. First, their interest is from a European perspective—which obviously, despite our vital interest in Western Europe, is somewhat different from our own. Secondly, I submit that any assessment of the net military capabilities balance in Central Europe—and there have been many over the years—will reach the same basic conclusions as the JMNA: that despite imbalances in capability, deterrence has worked for 40 years. The defensive nature of the NATO Alliance means that military capability is of value primarily as it functions as a component to deterrence. As you are well aware, deterrence is a complicated and uncertain calculus with a high political and psychological content. A significant issue in the calculus of deterrence is the perception of the threat, and our European allies certainly view the Soviet threat differently than we do. It is not unreasonable to conclude that our allies view the issue of defense burden sharing differently also. They of course have emphasized noise, pollution, high military population density, etc. as evidence of their burden.

The unfolding changes wrought by General Secretary Gorbachev's perestroika programs are likewise altering their perspectives. In short, I am not convinced that sharing the conclusions of a US military net assessment would prove to be sufficient impetus to encourage our allies to increase their share of the defense burden.

NET ASSESSMENT ISSUES: SOVIET MILITARY PROBLEMS

Question. Admiral, you have listed a number of problems affecting the Soviet military—ranging from unprepared troops and poor officer leadership to poor operational and technical discipline within the ranks.

What impact has the full range of problems you mentioned had on current Soviet military capabilities, and on the military balance between the US and its allies and the Soviets and their allies.

Answer. Mr. Chairman, in the overall scheme of force balance it is difficult to specify exactly where and how the force training, leadership and capability of any force makes a difference. I've tried to point out that as much as any other single warfighting element, the Soviet Union, and I believe the entire Warsaw Pact, justifiably have great respect for the leadership, morale and training of US and allied forces. The Soviet Union and the Warsaw Pact, with some exception, do not maintain as high quality forces. They understand very well, beyond the bean count so to speak, that high levels of preparedness, realistic training, effective leadership at all levels, and dedication to duty constitute significant warfighting advantages. We have some very capable reserve component forces, for example. The Soviet Union and Warsaw Pact make no effort to maintain reserve component skills. Tally a lot of forces and the balance of the scale begins to turn. At strategic or theater levels does it completely turn the balance? I think not. But it certainly deters. It worries some in the Soviet Union that we may not fight according to plan. Theoretically they are capable of responding operationally to our force deployments, and they are very able students of the military art. What worries them more is how the battle will go when it doesn't go according to plan. They appreciate that we and our allies are more capable and effective at taking advantage of opportunity, of responding autonomously at lower levels; in general, at the art of fighting when individual leadership and skill count most. I cannot tell you Mr. Chairman that one of our battalions is worth one of their regiments or that one of our aircraft can take out three of theirs. I can, however, assure you that the Soviet Union and Warsaw Pact respect our quality in this regard, and know that it makes a difference. This force quality that they lack in comparison to us, is a substantial, unquantifiable edge that we absolutely must retain.

NET ASSESSMENT: KOREA

Question. Much of the North Korean Air Force is Korean War-vintage MiG 15s, and North Korean pilots fly very few hours monthly. If the US Air Force was held to the same amount of training, our pilots would not be qualified to fly aircraft, let alone perform combat missions. Isn't the air balance on the Korean Peninsula significantly in our favor? Doesn't our air superiority limit North Korea's ability to conduct a successful ground invasion of South Korea?

Answer. We believe that the qualitative air balance on the Korean Peninsula is in our favor at the present time. U.S. and ROK pilots are better trained, and the aircraft they fly are more capable than those of the North Koreans. Although the North Koreans have the MiG-29 and the MiG-23, they are few in number and training on them is rudimentary and infrequent. They are not currently considered a significant threat. However, while Allied superiority in the air would impact North Korea's ability to conduct a ground invasion of South Korea, air power alone is not sufficient to prevent an invasion. Sufficient numbers of ground forces relative to those of the enemy are also required, as Seoul is only 40 kilometers from the DMZ.

BURDEN SHARING

Question. You have warned, in the past, that NATO electorates are divided sharply on security issues, and that this means trouble for the alliance as it proceeds with a large agenda, including attempts to increase allied defense burdensharing. Which NATO governments and their publics are the most and least supportive of U.S. positions?

Answer. Although our NATO allies do not agree with the United States on every issue, their support for our positions is generally high. All agree that a continued strong Alliance is necessary to deter potential threats to its members and that this deterrence can be maintained only with strong military forces. Of the current problems facing NATO, the only areas of significant disagreement are short range nuclear weapons negotiations and modernization. Only the United Kingdom strongly supports the US position that negotiations should not occur until substantial progress is made on the conventional side. Naturally, there are differences of opinion on out-of-area policy questions, such as Central America, in which the allies are not directly involved. And because of varied economic and political perspectives, there are occasional differences over European issues such as East-West trade. These incongruities are natural in an alliance of 16 sovereign nations and we should not attach too much importance to them. Rather, our focus should be on the forces of convergence (shared values and ideals, democratic traditions, and historical ties) during these critical times.

Question. Which of our NATO allies have the best and worst records of burden-sharing, and in which specific military categories? What prospects exist this year for any changes for the better or worse with respect to any of these nations?

Answer. A meaningful measure for determining nations' defense contributions is difficult to achieve. National contributions assume many forms, some of which are quantitative (percent of GDP for defense, military and civilian defense personnel as percent of population), and others that are qualitative (host nation support, out-of-area contributions). The Department of Defense, in its annual report to Congress on allied contributions, has assessed the burdensharing efforts among the NATO allies and concludes the following. Nations that are clearly doing more than their fair share include Turkey, Greece, the United Kingdom, and France. They allocate relatively high levels of their income to defense. Three nations—Denmark, Canada, and Luxembourg—contribute less than their rightful share when key indicators are assessed. The remaining nations have mixed records of contributions. At the upper echelon of this group are Germany, Norway, and the Netherlands which, despite below average performance on defense spending as a percent of GDP, are making good force improvement efforts and contributing in other ways (out-of-area, host nation support). In the lower echelon are Spain and Belgium, which have downward trends in spending as a share of GDP and below average performance in several other areas. The prospect for significant changes from these nations in the near term is not good. Like the United States, most European countries and Canada are facing budget constraints that, with political pressures developed from the perception of a reduced threat, will limit their ability to substantially increase their defense spending.

Question. Your testimony says that without the cooperation and willingness of our NATO allies to spend more for military capabilities, a successful conventional defense of Western Europe will be extremely difficult to mount. Do the political and military officials of our allies agree with this judgment? If so, what are they doing to try to convince their parliaments and publics to support increased defense budgets and increased allied defense burdensharing?

Answer. There is a general consensus among military officials within NATO that the conventional force advantages of the Warsaw Pact over NATO are cause for concern. However, political leaders are hesitant to address this issue because the prospect of increased conventional force spending would compete with elaborate social programs. With the advent of Gorbachev it is even more politically unpopular to call attention to the conventional imbalance.

U.S./SOVIET ALLIES BURDEN SHARING, RELIABILITY

Question. You have said publicly that for some time, you have believed that the nations of Eastern Europe have been unreliable allies for Moscow.

What are the military implications of this unreliability on NATO's ability at this time to deter or defeat Soviet aggression? How is this unreliability factored into the net assessment you make of the NATO-Warsaw Pact military balance?

Answer. I remain convinced that the Warsaw Pact is not as effective a coalition as the Soviets wish us to believe. While the Warsaw Pact member nations might be staunch allies in situations requiring the defense of their own territories, generally speaking, I question the reliability of some of the nations in times of crisis or conflict—particularly in the case of a postulated Warsaw Pact attack into Western Europe. Indications of problems abound: the continuing economic and labor unrest in Poland is a good example, and the increasingly vocal protests of nationalistic and self-deterministic elements may presage growing rifts among Warsaw Pact member nations.

The military implications of this unreliability may be very significant. Realizing that any conclusions are highly scenario-dependent, it is not hard to envision several possible situations in which some Warsaw Pact nations might be less than enthusiastic in supporting Soviet goals and objectives in a conflict in Western Europe. Like all other nations, members of the Warsaw Pact will certainly attempt to act in a manner consistent with their own best interests.

Potential Warsaw Pact unreliability is virtually impossible to quantify. However, the 1989 Joint Military Net Assessment (JMNA) addresses this issue from a qualitative perspective—particularly in comparison to the relative vitality, cohesion, and unity of effort of NATO. It is my military judgment—and this is reflected in the JMNA—that the issue of Warsaw Pact reliability is of concern to Soviet leaders, and it certainly must color their own assessments of the NATO-Warsaw Pact military balance.

STRATEGIC NUCLEAR NET ASSESSMENT

Question. Admiral, your statement says that the Soviet lead in strategic nuclear damage expectancy against military targets--due to its ICBMs—"means little" in the overall nuclear calculus. This Soviet damage expectancy advantage was the principal motivating force behind the MX program, and behind the emphasis on hard target kill in the entire strategic modernization program. Doesn't your statement eliminate the urgency usually associated with deploying MX/Rail Garrison or the Small Mobile ICBM (SICBM), since current ICBMs remain viable and the programs to modernize the air and sea legs of the nuclear TRIAD continue?

Answer. The urgency associated with deploying PEACEKEEPER Rail Garrison or SICBM has not changed. Our strategy is to deter war. The Joint Chiefs of Staff believe that deterrence and stability come from establishing significant doubt in the minds of the Soviets that their war aims could be achieved under any scenario of war initiation. Mobile ICBMs make a significant contribution to this Soviet uncertainty; hence, providing our motivation for such strong support of this particular modernization effort.

PHILIPPINES BASING NET ASSESSMENT ISSUES

Question. Admiral Crowe, your statement alludes to the difficulties of maintaining our military installations in the Philippines. What is your best judgment at this time of the likelihood these bases can be retained beyond the expiration of the current bases agreement in 1991?'

Answer. US military presence at facilities in the Philippines is guaranteed through 1991. President Aquino has said the MBA expires 16 Sep 1991. Actual MBA language says that the agreement remains in force until 16 Sep 1991, after which either government may terminate it on 1 year's notice. US military units stationed in the Philippines are there as a result of an agreement between allies. Our relationship is one that benefits both the United States and the Republic of the Philippines. Facilities in the Philippines are critical to maintaining a continuous US deterrent presence in the Indian Ocean and Western Pacific region. In addition to economic and employment advantages, the US presence benefits the Philippines by contributing to Philippine security against potential external threat. We do not expect that this situation will change during the foreseeable future. A formal review of the Military Bases Agreement (MBA) was completed in October 1988 and we anticipate that consultations to renegotiate the MBA will begin by the end of 1989. It is not our desire to stay in the Philippines if we are not wanted and we could relocate the bases should that be required. We anticipate however, that a successful renegotiation of the MBA will be completed.

Question. You state we must remain flexible on Pacific region basing options. What are military and cost advantages of the most likely alternative options to the Philippines bases? How long would it take the US to implement any of these options, and what financial or other help could we expect from our Pacific Ocean allies and friends—principally Japan, Australia, South Korea and the ASIAN nations—to implement these options?

Answer. Facilities now located in the Philippines could be moved to alternate sites. Primary relocation options center on existing US bases in Hawaii, Guam, Japan, Korea, Alaska, and CONUS but, a major disadvantage to relocation is the loss of strategic location afforded by a presence in the Philippines. Prospective relocation sites are located a minimum of 1,000 miles away from the strategic SLOCs of Southeast Asia. Additionally, no single relocation site is capable of assimilating all missions now sited in the Philippines. [Deleted.] The Joint Staff has initiated a comprehensive study that will provide detailed information on military and cost advantages and disadvantages of the alternatives to facilities in the Philippines. A major portion of this study will be provided by USCINCPAC who, with component commands, is conducting an in-depth study of basing options. The final report will be completed by 30 June 1989. It will be forwarded to Congress by the Secretary of Defense in accordance with Section 1308 of the FY-89 National Defense Authorization Act (Public Law 100-456).

CENTRAL/LATIN AMERICA NET ASSESSMENT ISSUES

Question. What can the U.S. do specifically to deal with the crisis you say the U.S. faces in Panama and with the problems with the Panamanian Defense Force?

Answer. The United States is taking steps to protect our citizens in Panama, assert our treaty rights under the Panama Canal treaties and meet our obligations to defend the Panama Canal and maintain its safe operation and neutrality as required by the Panama Canal Treaties. At this point, that is all that I can say—specifics will be made public following the Administration's ongoing review of U.S. policy towards Panama.

SEALIFT NET ASSESSMENT ISSUES

Question. Admiral Crowe, you have testified about NATO's difficulty in mustering sufficient sealift to reinforce Western Europe in accordance with alliance goals. How soon after mobilization do you expect to receive the 450-600 NATO sealift ships that are anticipated? Will this be soon enough to reinforce Europe effectively? What can be done to reduce or eliminate this military deficiency?

Answer. NATO sealift pool ships are available as soon as NATO activates the Rapid Reinforcement Plan. The vast majority of the NATO sealift pool is in active commercial trade in the Atlantic. Those NATO sealift ships in US ports would be immediately available, ships in trade would become available after receiving direction from their national authorities to commence transiting to CONUS ports.

Though there has been improvement, we are not achieving the goals we have set ourselves for the reinforcement of Europe. Continued progress on our pre-positioning and strategic mobility programs will move us closer to those goals. A number of additional programs are being worked to improve force closures to Europe, such as improved availability and capability of the NATO sealift pool, improved utilization of the available containerships and better data systems to more efficiently utilize available lift resources.

SOVIET ASAT

Question. What are the operational strengths and weaknesses of the Soviet anti-satellite systems?

Answer. The Soviets possess the world's only operational ASAT capability, which poses a direct threat to US low-earth-orbit satellites. [Deleted.] In effect, the Soviets have a demonstrated ASAT capability that remains an operational threat to low altitude US systems. US high altitude systems are not vulnerable to the co-orbital ASAT launched by the SL-11.

The Soviets also have the potential capability to attack satellites by means of launching ABM missiles in a direct ascent profile. The Soviet ABM system has been in place since 1968, and the ABM-1B Galosh missile is the most likely ABM candidate for ASAT use. [Deleted.]

The Soviets probably have the technological capability to use active electronic warfare (EW) against space systems, [deleted] no organizations or facilities have been identified or assessed to have a dedicated EW mission against space systems.

There are two test facilities at Sary Shagan that are currently assessed to have high-energy lasers and associated optical equipment with the potential to function as ground-based ASAT weapons. [Deleted.] Directed energy ASAT systems have several potential advantages over the Soviet co-orbital interceptor. Such systems offer multi-shot capability, near zero attack warning time, and improved capability against maneuvering targets. [Deleted.] The Soviet high energy laser program continues to receive high priority, and many of its research facilities conduct work in the area of laser weapon development.

In summary, the Soviets have built and continue to improve on an impressive, integrated space warfighting capability, for which the US currently has virtually no capability to counter. Our current plans for developing an ASAT capability would provide us the capability in the future to deny enemy targeting and surveillance from space if necessary, and/or to respond-in-kind to an enemy ASAT attack against one of our satellites. Such a capability would also provide a deterrent against Soviet use of their ASAT weapon capabilities.

Question. What is a "net assessment" of the military impact of anti-satellite capabilities on the U.S. and Soviet Union now, and in the future if both the U.S. and U.S.S.R. develop more capable ASAT systems?

Answer. For my complete "net assessment," you should soon be receiving both a classified and unclassified version of the Joint Military Net Assessment as well as a Defense Department Report on Space Control, which were requested in the fiscal year 1989 Appropriations Bill.

It is obvious that the Soviet Union today maintains an uncontested advantage—vis-a-vis the United States—in the control of and access to space. Their massive investments in space-based surveillance (e.g. RORSAT, EORSAT, etc.), navigation, and communications systems, as well as an extensive space support infrastructure, coupled with an operational co-orbital ASAT and several other systems with potential for ASAT capability, reflects the Soviet intent to provide dedicated warfighting support from space to their forces throughout the spectrum of conflict, while attempting to deny the United States the use of some critical high and low altitude satellite support. I am convinced that these Soviet systems, current and future, will directly impact American and allied naval and ground forces worldwide should any level of conflict ever erupt between the superpowers. To bring this imbalance into warfighting equilibrium mandates that the United States develop and deploy an effective ASAT capability; not for space supremacy or superiority, but as a deterrent and to insure a measured, balanced response to Soviet military space-based systems and ASAT capability.

[Deleted.] I do not believe the Soviets will do anything visibly different if we were to build our own ASAT capability. History indicates that the Soviets plan for the long term and do not rush headlong into weapon development activities in response to external threats. The Soviets currently have an extensive space program and are already making large investments in developmental systems with potential for ASAT capability. They will most likely continue to pursue their well-orchestrated, methodical ASAT development program, regardless of what we do. We cannot continue to relinquish the ability to control access to and use of space to any potential adversary. The United States must press forward with ASAT acquisition now.

Questions Submitted by Senator Byrd

NET ASSESSMENT

Question. Sound net assessments must precede strategic planning, which in turn should underpin Department of Defense requests for funds needed to deter or deal effectively with threats to U.S. security. However, net assessment studies by the Office of the Secretary of Defense (OSD) receive only limited distribution beyond the Secretary of Defense, his Deputy, and the Chairman of the Joint Chiefs of Staff. Net assessment is a low priority in the military Services, some of which have no net assessment office at all. Why is the distribution of Office of the Secretary of Defense net assessment studies so limited?

Answer. The Office of Net Assessment was created in 1973 as a way of providing the Secretary of Defense and other top-level policymakers with confidential advice on the capabilities of U.S. forces as compared to the objectives and missions assigned to them and the forces opposing them. These candid reports have been subject to some limits in their distribution when compared with many other reports produced in the Department. However, they are forwarded to a much wider audience than the question suggests. In addition to the Secretary, his Deputy, and the Chairman, JCS, copies are provided to the Service Chiefs, their operational deputies and intelligence chiefs, the unified and specified commanders, relevant Under Secretaries and Assistant Secretaries of Defense, and other agencies involved in net assessment efforts.

Question. How can the planning staffs of the Services perform well without routine access to net assessments?

Answer. The Service staffs do have access to net assessments. As has been stated in the answer to the previous question, Service Chiefs and their key operational and intelligence deputies are provided copies of relevant OSD net assessment reports that concern their Service. Further, each Service not only receives copies of the Chairman's Joint Military Net Assessment (JMNA), but actively participates in the development of the report. The OSD net assessments are meant to serve as inputs for strategic planning rather than a tool for near-term programming efforts. Service analytical efforts tend to be focused more near-term and are oriented towards specific weapons systems using risk or net technical assessment methodology.

Question. What input do Service and regional commander in chief net assessment offices make to the Office of the Secretary of Defense process?

Answer. There are few offices within the Services or the unified and specified commands that are specifically dedicated net assessment efforts. However, many of the regional commanders in chief do have organizations that do this type of work as an adjunct to other activities. Many of these organizations are closely linked at the informal level to the efforts of the OSD Office of Net Assessment. For example, analysts from OSD Net Assessment and from the regional commanders in chief routinely exchange information via correspondence or staff visits. In addition, many of these regional commanders have frequent face-to-face exchanges with the Director of OSD Net Assessment on matters of mutual interest. Further, the OSD net assessment office routinely forwards first drafts of relevant net assessment reports for informal review and comment to these commanders and their staffs. And as stated previously, the OSD net assessment office forwards final copies of relevant net assessment reports to these unified and specified commanders.

Question. How well do Defense Department reports to Congress reflect net assessment results?

Answer. Net assessment results are reflected in many Departmental reports to Congress. Annually, the Secretary forwards the Chairman's Joint Military Net Assessment in both classified and unclassified form. In addition, both the Secretary's Annual Report to Congress and Soviet Military Power include chapters specifically oriented towards and drawing from net assessments of the military balance. The newly established Net Assessment Coordinating Committee [NACC] is doing a commendable job of encouraging wider use of net assessment products and process in the development of Departmental reports to Congress. The assessment the Congress receives is consistent with the main findings of the internal net assessment results.

Questions Submitted by Senator McClure

NEED FOR OPERATIONAL ASAT

Question. The fiscal year 1990 request includes funding for a new kinetic kill ASAT program, as well as funding for ongoing research into directed energy ASATs. The Navy has been the prime supporter of this program, because of the need to protect its ships from Soviet RORSAT and EORSAT threats. As a Navy man, and as Chairman of the Joint Chiefs, could you give us your views on the need for an operational U.S. ASAT?

Answer. It is obvious that the Soviet Union today maintains an uncontested advantage—vis-a-vis the United States—in the control of and access to space. Their massive investments in robust space-based surveillance (e.g. RORSAT, EORSAT, [deleted] etc.), navigation, and communications systems, coupled with an operational co-orbital ASAT and several other systems with potential for ASAT capability, indicate clear intent to prosecute warfighting in space throughout the spectrum of conflict. I am convinced that these Soviet systems, current and future, will directly impact American and allied naval and ground forces worldwide should any level of conflict ever erupt between the superpowers. To bring this strategic imbalance into equilibrium mandates that the United States develop and deploy an effective deterrent-in-kind ASAT capability; not for space supremacy or superiority, but to insure a measured, balanced response to Soviet space-based weapon systems and ASAT capability.

It has been confirmed by DIA and the CIA, that the Soviets have not only developed an operational co-orbital ASAT, but also an extensive infrastructure of other potential ASAT-capable systems, like the GALOSH (nuclear and conventional-tipped), ground-based lasers, and electronic warfare systems. Advanced technology programs indicate the potential for other lethal ASAT systems as well, such as space-based lasers, neutral particle beams, and space-based kinetic kill interceptors. In the aggregate, the Soviets have direct ascent, all weather, day or night, rapid response, multiple kill phenomenology ASAT capable systems to deny, degrade, and destroy US satellites. They have prepared themselves and are ready, especially with the co-orbital interceptor, to fight and fight successfully. We have nothing approaching that capability—thus the need for a US ASAT capability is essential.

In summary, lack of a US ASAT capability, clearly focused on negating hostile LEO satellites or even the co-orbital interceptor itself, represents a serious warfighting deficiency. [Deleted.] We cannot relinquish control of space to an adversary whose intent is clear. The United States must press forward with ASAT acquisition now.

Questions Submitted by Senator D'Amato

PANAMA

Admiral, since this is a closed hearing, I'd like to use this opportunity to bring up several Defense concerns which have been raised in this committee but which were not able to be fully discussed due to their sensitive nature.

Question. Could you tell us the level of confidence you have that the ruling government of Panama will allow the United States free passage through the Panama Canal in the event of a shooting war with the Soviets in Europe or elsewhere?

Answer. The Panama Canal treaties require that the Canal will remain neutral. The US is obligated under the Neutrality Treaty to ensure the neutrality and safe unimpeded operation of the Canal. It is not in the best interest of any Panamanian government to interfere with the operation of the Canal.

[Deleted.]

Question. What are the US military's plans to overcome any attempted blockade?

Answer. [Deleted.]

Question. Should more be done now to beef-up the US defenses in Panama?

Answer. No, based on the current world situation, and significant rapid deployment capability inherent in US force structure, US forces in Panama are sufficient to meet the current threat.

DRUG STRATEGY

Question. How will the $300M requested in the Bush budget for military involvement in the drug war be used?

Answer. The $300M for the drug war is allocated to the following categories (all figures are approximations): $60M for tactical communications supporting law enforcement agencies, $40M for National Guard, and $200M for detection and monitoring. Of the $200M, $100M is allocated to meet CINC requirements to cover their command and control, connectivity, intelligence support and flying hours and ship steaming days above their normal requirements. The remaining $100M is identified for procurement of land based aerostats, a semisubmersible with aerostat, and an aerostat movement which will enhance surveillance capabilities.

Question. What additional resources are needed to effectively stop the flow of drugs into the United States?

Answer. At this time we do not know the additional resources required to counter the flow of drugs. The Joint Staff conducted a study of all available surveillance sensors. Of the $200M needed for CINCs' requirements and surveillance sensors in fiscal year 1989, the Joint Staff recommended that OSD seek reprogramming from Congress to convert some O&M funds into procurement and research and development for essential items. Based on the sensor study, the Joint Staff recommended procurement of four land-based aerostats, a semisubmersible with aerostat, and relocating an aerostat to a more effective position. With these assets, gaps will still exist in radar coverage for detection and monitoring. While acquisition of additional sensors will be useful, we still do not know the specifics for additional resources at this time.

ANTI-SATELLITE WEAPONS

Question. One of the most common arguments against further development of a US anti-satellite weapon is that the Soviets do not have a robust, quick acting system of their own so a US program would only spur them on to build one. But, isn't it true that the Soviets already spend over $1 billion annually on the ground-based laser research at Sary-Shagan and that such technology is consistent with an anti-satellite capability which is flexible, instantaneous, and practically undetectable by our side? Also, it is said that the co-orbital ASAT system, which the Soviets have tested, gives the US significant warning time during its attack phase. Admiral, isn't it true that this warning time is useless to the US since a Soviet ASAT launch would not necessarily be the first aggressive Soviet act in their preparation for hostilities and, besides that, our satellites cannot be defended no matter how much warning we have?

Answer. During my testimony of 17 March 1989, I discussed the need and rationale for a US ASAT capability. I agree with your assessment. It is clear to me that the Soviets do indeed have a quick acting ASAT system—the co-orbital ASAT, which poses a direct threat to our low-earth-orbit space systems, and that Soviet directed energy and electronic warfare systems could also pose a threat to our space systems at all altitudes. Based upon years of military experience and current intelligence assessments, I do not believe the Soviets would do anything visibly different now if we were to build our own ASAT capability (kinetic or directed energy). History indicates that the Soviets plan for the long term and do not rush headlong into weapon development activities in response to external threats, like a US ASAT development program. The Soviets currently have an extensive space program that is dedicated to support of its terrestrial military forces. They are already making massive investments in space-based force enhancement capabilities and several developmental systems with potential for ASAT capability. They will most likely continue to pursue a well-orchestrated, methodical ASAT development program, regardless of what we do, leading to reliable and effective ASAT systems geared to warfighting throughout the spectrum of conflict.

[Deleted.] Clearly, obtaining a US ASAT capability would improve our overall military options.

BURDEN SHARING AND U.S. TROOPS OVERSEAS

Question. Could you give us your views on the question of increased burdensharing by our allies in Europe and in the Pacific, and the advisability of withdrawing US troops from these regions? In your opinion what types of weapons or forces should our allies contribute to relieve the US defense burden?

Answer. Both our European allies and Japan have attained significant economic growth in the past decade and can afford to assume a greater share of the economic defense burden. At the same time, however, the United States cannot force them to assume more by initiating unilateral actions such as troop reductions. Like the United States, the European allies are experiencing budgetary and financial pressures that will limit their ability to increase substantially their financial contributions. In the Far East, external regional and internal political factors complicate Japan's ability to contribute more to the defense effort.

Unilateral actions are also counterproductive to a critical component of the US National Security Strategy: Forward-based defense. US defense policies should not be held hostage to allied performance. Instead, broad, multilateral efforts are required to ensure that US security requirements are balanced with the need to redistribute the burden of defense. A determination of allied weapons and forces that can contribute to this balance should be made in the broader process.

Finally, efforts to engage in a unilateral withdrawal in Europe undermine NATO's strategy for Conventional Forces in Europe (CFE) negotiations that began in March. Alliance solidarity, crucial to the success of the INF negotiations, is critical to the CFE process as well. Warsaw Pact incentives to negotiate seriously are reduced if it believes that efforts in the US to reduce troops without requiring East reductions may be successful.

Question. The annual report to Congress by the Secretary of Defense for fiscal year 1990 calls for the Japanese to improve their capability in air and sea defense. Doesn't it make more sense for the Japanese to buy U.S. weapons off-the-shelf or to co-produce them and thereby field them sooner, rather than to have them to go through much longer co-development programs?

Answer. Yes, from a U.S. perspective it is the best solution. There are certain advantages, one of which you point out—speed of fielding the system—that make off-the-shelf buys very attractive. Obviously, a direct purchase contributes to our national economy and in some cases keeps production lines open long after the system has entered the U.S. inventory. Those are advantages that are in our interest, but it is also a view that may not necessarily be shared by allies.

When you refer to co-development, I assume you are referring to the FSX program. We cannot dictate to Japan, nor to any of our allies, to buy off-the-shelf weapons. However, in many instances Japan does. Japan purchases almost 100 percent of her foreign procured weapons systems from the U.S. FSX is a situation in which Japan decided to replace her aging (and indigenously produced) F-1 aircraft. That was a decision we fully supported. A replacement for the F-1 will enhance the air defense environment and contribute to the Japanese goal of defending their own territory, air and sea lanes.

As is the case with all modern, industrialized nations, the decision to develop and produce certain major weapons-systems is based on two primary factors. One is the desire to be as self-sufficient as possible in its own national defense; the other is to benefit economically from the production process. By the mid-1980's, it appeared certain that Japan would decide to develop and produce indigenously the FSX rather than buy a U.S. aircraft off-the-shelf. DoD made a strong and persistent pitch to the Japanese to buy or co-produce one of our very capable fighters, but without success.

The agreement to co-develop the FSX is the next best choice, and does hold the promise of technology flowback to the U.S. The alternative is indigenous production or an other-than-U.S. foreign purchase, which could jeopardize interoperability and the longstanding reliance on U.S. weapons standards.

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will now stand in recess subject to the call of the Chair.

[Whereupon, at 4:53 p.m., Friday, March 17, the subcommittee was recessed to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

WEDNESDAY, JUNE 7, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:05 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Bumpers, Garn, and Cochran.

DEPARTMENT OF DEFENSE

AIR FORCE POSTURE

STATEMENTS OF:

HON. DONALD B. RICE, SECRETARY OF THE AIR FORCE
GEN. LARRY D. WELCH, CHIEF OF STAFF, U.S. AIR FORCE

OPENING REMARKS

Senator INOUYE. This morning the subcommittee continues its review of the President's fiscal year 1990 request for funding of the Department of Defense by examining the component of that budget which funds the programs and activities of the Air Force.

Senator INOUYE. The President's fiscal year 1990 Air Force budget request is $97.8 billion. It is the second largest component of the total Pentagon budget.

Over the past decade, the Air Force budget enjoyed the largest total real growth of the three military departments, growth of 64 percent. Its average annual real growth also was the largest.

Now, our Nation has entered a new period of fiscal constraint, as real growth disappears and total defense dollars shrink. Yet, in contrast to the general trend, proposed funding is growing for several costly and controversial new Air Force programs.

To meet its defined goals within the next 5 years, the Air Force must find increased funds for two intercontinental ballistic missiles, two strategic bombers, a revolutionary new fighter, a new advanced transport aircraft, new space boosters, and several new missiles.

The subcommittee recognizes that the Air Force has made painful choices in revising its fiscal year 1990-94 spending plan. However, in view of the likely further constraints on defense spending, it is not clear that even these choices are enough to make the proposed Air Force program affordable.

In addition, the military impacts of these current and likely future choices have been obscured by their fiscal impacts. The effect that these budgetary choices will have on military programs and our national security is imperfectly understood.

To some extent, fiscal concerns have obscured these effects. Moreover, the military dimension of fiscal decisions must be assessed within a changing national security context, one which is vastly different today than that which existed just a few months ago. This, too, makes it difficult to evaluate the merits of fiscal decisions.

The latest NATO and Warsaw Pact conventional arms control proposals could have a major impact on the global military balance and on the requirements for improved Air Force capabilities.

To discuss these and other Air Force issues with the subcommittee are the new Secretary of the Air Force, Hon. Donald B. Rice, and the Air Force Chief of Staff, Gen. Larry D. Welch.

It gives me great pleasure to welcome the new Secretary in his first appearance before this subcommittee.

Gentlemen, you lead the Air Force during a period of major fiscal and military change, even unpredictably. We look forward to hearing how you intend to cope with these realities and how Congress should consider them as we evaluate your fiscal year 1990 budget request.

Mr. Secretary, welcome, sir.

Dr. RICE. Thank you, Mr. Chairman, members of the committee.

It is a great honor for me to appear before you today in my first hearing, as you have noted, as the Secretary of the Air Force. I look forward to the challenges that lie ahead and also to the opportunity to work with each of you as we make the tough decisions necessary to preserve the freedoms this country enjoys.

We need to consolidate and preserve the gains that we have made, while adapting to the trends and changes throughout the world that you have noted.

Recent events in China certainly stand as a stark reminder that the forces of freedom and democracy will not find victory easy or automatic.

Here at home, shifting national priorities and budget stringency greatly complicate the task of defense management. We face the difficult task of managing a transition. Following the defense recovery, Air Force funding declined 15 percent—the largest reduction of the three military departments. Those challenges will test our skills, and we are going to need your support in the Congress.

We especially need your support on those issues affecting the quality of life our people are provided. Recruitment and retention of first-rate people will remain our top priority, and the incentive and compensation programs within the military must keep pace to allow us to continue attracting and retaining the fine caliber of people we have serving today in the Air Force.

Along with people, we must maintain a strong emphasis on modernization and readiness. I share Secretary Cheney's aversion to hollow forces and his commitment to retaining only those force levels that can be provided adequate readiness and sustainability support.

At the same time, careful attention must be given toward understanding the value of our new systems under development. systems such as the B-2, C-17, ATF, peacekeeper rail garrison, small ICBM, MILSTAR, and others, as you have noted.

Your support is necessary to keep each of these going at an appropriate and affordable pace. The value of each is very high, but, unfortunately, often receives much less attention than the cost.

As I stated at my confirmation hearing, a better deal for the taxpayer should be our watchword in defense management. Part of that better deal involves insuring that each of American's basic freedoms remain intact. To do that, we must give our fighting forces the best tools possible to do their job.

At a recent promotion ceremony at which I had the honor to officiate, the young officer being promoted reflected back on his career, thanking those who had made his promotion possible.

I was quite touched by that young man's sense of duty. As I reflect on his words, I am made aware of the responsibility we have to him and the thousands of other men and women who risk their lives daily.

We owe these troops the most capable and reliable weapon systems, but we also have the obligation to develop and procure them efficiently so that they are affordable and a good deal for the taxpayer.

How do we go about that?

First, let me ask that you give our new management team some room to work, some time to resolve the issues within our own organization. I ask your forbearance in not presuming the answers for us.

A second part of that better deal for the taxpayer will involve efforts to cut costs through streamlining, consolidation, reductions in overhead, and more efficient ways to do our business.

We are fully aware that, as such decisions are made, they will touch home in specific States and districts. That is inevitable. But responsible stewardship of the lower defense budgets that you have pointed to, Mr. Chairman, requires us to cut overhead and support costs, not just force levels and new systems.

I respectfully urge that you join us in a cooperative spirit, providing the backing we need to continue our mission of defending this great country and squeezing the maximum defense from the overall budget that you provide us on behalf of the American people.

We have a good budget for fiscal years 1990 and 1991, a budget that balances the needs for quality people and quality forces. However, without the stability in budgeting that only Congress can provide, we cannot deliver quality program forces in sufficient quantity, at acceptable costs, and with prudent risk.

We stand ready to work with the Congress to insure that the U.S. Air Force remains the world's greatest aerospace power, underwriting our national military strategy today and in the future.

Mr. Chairman, at this time I would ask that General Welch make his opening statement, and I look forward to our working relationship in the national interest.

Thank you very much.

Senator INOUYE. I thank you very much, Mr. Secretary.

STATEMENT OF GEN. LARRY D. WELCH

General Welch, it is good to see you again, sir.

General **Welch**. Thank you, Mr. Chairman, members of the committee. I would just add some very brief comments on some important, unfinished business.

We necessarily continue the very high priority on the forces that provide assured, strategic nuclear deterrence. Upgrading existing systems and fielding new forces have produced very significant improvements in currently fielded strategic deterrent forces.

For the land-based ICBM's, to date we have upgraded the Minuteman missile by improving its accuracy by about 50 percent, and we have deployed 50 silo-based Peacekeeper missiles.

Beyond those steps, we have been striving for 8 years now to reach a consensus to complete the modernization of this very important leg of the Triad.

The President's decision to rebase the existing silo Peacekeeper force to the rail garrison basing mode, while continuing development of the small ICBM, addresses both the need for assured day-to-day deterrence and stability in crisis.

Our goal for the bomber force continues to be, roughly, 340 modernized, nuclear capable heavy bombers, and that has been the goal since the mid-1970's.

The upgraded B-52, more than 27 years old today, will serve well in the cruise missile carrier role for at least another decade. The B-1 can hold most Soviet targets at risk today, and with planned upgrades will cover many targets for years to come. The B-2 will provide the long-term capability to most efficiently cover a wide range of targets, to include heavily defended targets.

As you have mentioned, the cost of the B-2 is an issue in many minds. But, when we consider the value along with the cost, it remains a good buy for strategic nuclear deterrence.

The Secretary mentioned our focus on conventional capabilities. They have been much improved with upgrades and developing new systems. The cornerstone remains the airlift required to quickly project and sustain combat forces, and the C-17 is a key to that capability.

Our intense focus on readiness has produced remarkable improvements in the morale and the state of training and the condition of the equipment of the current force. However, the budget will not sustain the high rate of readiness, the sustainability of the current force, and the modernization essential to insure future readiness.

Adjusting to the reality of the declining budget over the past 4 years and a zero budget in the 1990's, and the prospect of low growth, at best, in the future, we have made balanced reductions in force structure and in sustainability and modernization.

Just as one example, budget driven decisions of the last 3 years have led us to reduce manpower by 37,000 people, based on fiscal year 1986 through fiscal year 1989 end strength and, by the time we complete the actions now underway through the end of 1990, we will have reduced the Air Force by 32 squadrons of combat and support aircraft.

That is just one indication of the draconian measures that have been required to adjust programs to the 4 years of declining budgets and in the guidance for the future.

Nonetheless, at the moment, we remain a robust, ready force, with far more combat capability as a result of continuing modernization over the past 12 years and the intense concentration on readiness over the past 9 years.

Our concern is that we not squander those gains with short-sighted budget actions at this point in time.

We have, over the past decade, seen very substantial payoffs from investments supported by this Committee. Much work remains, and the Air Force looks forward to continuing the partnership with this Committee that produces those gains.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF DONALD B. RICE AND GEN. LARRY D. WELCH

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

The mission of the United States Air Force is to organize, train, equip, provide, and support aerospace forces to deter aggression and, if necessary, defeat aggressors across the spectrum of conflict. This supports the most fundamental national security objective of the United States, the preservation of our free and independent nation with its institutions and values intact.

National Security Objectives Dictate Military Forces. There is a direct linkage between national security objectives, the resulting national military strategy, and the military tasks and capabilities required to underwrite that strategy. The national military strategy is well-conceived and has been remarkably stable in support of consistent national security objectives. That strategy, based on deterrence, is intended to ensure that no adversary could ever expect to gain by attacking the US or its allies. It is an austere strategy. We do not, either as a nation or an alliance, seek to match our adversaries weapon for weapon, let alone strive for superiority. Our goal is a cost-effective coalition of forces to deter, and that has been a consistently affordable and successful strategy for more than four decades.

The process of building coherent forces is relatively straightforward so long as there is a clear understanding of the threat, and resources are reasonably matched to the objectives of our enduring strategy.

The Threat. The continuing buildup of Soviet military power has, until recently, resulted in a public consensus on the need for a strong defense. Now, however, Mr. Gorbachev is projecting an international image that has encouraged hopes for fundamental changes in Soviet behavior. Whether perestroika and glasnost, if fully realized, will constitute a real opportunity for more fundamental improvements in US relations with the Soviet Union, and allow prudent reductions in US forces, remains to be seen. The Soviets have declared a shift to a defensive strategy of "reasonable sufficiency." However, there is little apparent change in the Soviet military posture to date. Soviet execution of their announced unilateral reductions of troops, tanks, artillery, and combat aircraft may reduce the quantitative superiority of Warsaw Pact forces, but the impact on North Atlantic Treaty Organization (NATO) force needs is unclear.

While these declared Soviet intentions should be viewed as positive, our defense requirements must be based on existing and projected Soviet capabilities rather than announced intentions. The lessons learned from past dealings with the Soviet Union clearly demonstrate the value of dealing from a position of strength and resolve. Just as the successful negotiation of the Intermediate-Range Nuclear Forces (INF) Treaty directly reflected NATO's resolve in countering Soviet SS-20 missiles, so too has US military strength demonstrated to the Soviet leadership the futility of attempting to impose their will on the free world. Our military strength remains a major influence on the course of world events, along with economic and political factors.

Matching Resources to Objectives. The essential continuity in national security objectives and national military strategy has not always been matched by a corresponding continuity in resources. The entire defense establishment has experienced a budgetary roller coaster. In the 10 to 15 years it takes to develop and field a new weapon system, there may be several substantial swings in defense funding. The inefficiency associated with this lack of stable financial planning dwarfs all other causes of inefficiency in defense procurement and programming.

In the first half of the 1980s, the support of the Administration, Congress, and the American people enabled the Air Force to redress shortfalls in readiness, sustainability, and force structure that developed during the 1970s. As a result, today's Air Force is better manned, equipped, and prepared than at any other time in history. Nevertheless, defense budget reductions over the past 4 years, and the prospect for further budget austerity, have forced us to scale back, stretch out, and cancel many programs. The cumulative effect of these reductions and the markedly reduced budget levels for FY 90/91, if continued, will severely constrain future capability. The result will be greater risk in deterring aggression around the globe.

Leveraging Investments. In seeking to maintain continuity of capabilities in a constrained resource environment, the Air Force follows a three-fold approach to leveraging its investments in today's forces and programs.

The first element of that approach is to ensure the readiness of forces already fielded by focusing on spares, support equipment, munitions, and training programs. As a result, today's tactical fighter forces can generate almost 80 percent more combat sorties than they could in 1980, and the readiness of the bomber force is at an all-time high.

The second element in leveraging our investments is to improve existing systems with cost-effective modifications and upgrades. As a result, the newest B-52, which has served us well for over 25 years, will continue to serve for at least another decade. The re-engining of the KC-135 will give that aircraft an extended service life and greatly enhanced capability. The entire C-141 fleet was improved by stretching the fuselage and adding an inflight refueling capability, resulting in an equivalent of about 90 more C-141s. And, thanks to well-executed upgrades, the 14-year-old F-15 remains the best air superiority fighter in the world.

The third element of the Air Force approach is to develop new systems, when necessary, taking advantage of US technological superiority. The front-end investment cost of new developments dictates that we seek new systems only when the need clearly requires that we exploit that technological advantage of a vibrant free enterprise system. The F-117A, B-2, C-17, and Advanced Tactical Fighter (ATF) are examples of this approach.

In addition, the Air Force will continue to emphasize good stewardship of the taxpayers' dollars. Management initiatives instituted to ensure that we get what we pay for include multi-year procurement; increased competitive bidding at all levels; dual-sourcing; equipment warranties; a vigorous program to avoid fraud, waste, and abuse; and active productivity improvement programs that are built on capital investments, enhanced work methods, and grass-roots support through such means as the suggestion program. We plan even greater emphasis in the future on efforts to cut overhead and support costs in areas where that can be done without reducing force structure or readiness and sustainability.

Air Force Priorities. The Air Force recognizes the budgets that it planned and programmed for in good faith, will not be fully funded. We have therefore consciously elected to avoid the hollow force structure of the 1970s and opted instead for a reduced force structure that maintains capabilities. To provide the best possible force within the constraints of the FY 90/91 Budget, the Air Force has reexamined its overall priorities. Our top priority is to recruit, train, motivate, and retain quality people. Within the overall task of building and maintaining quality forces, our priorities are: to modernize strategic forces, maintain a high level of readiness and sustainability, increase airlift capability, modernize tactical forces, and integrate our improved ability to operate in space into every mission area.

OUR PEOPLE

As the Air Force leverages its technological advances into the most reliable and capable systems in its history, we recognize that high-quality people are needed to exploit the capabilities of this high technology. People make the difference between success and failure, and that is why we place the highest priority on recruiting, retaining, and motivating quality people. That approach has been continuous since the founding of our service 41 years ago.

Today, more than one million Air Force Active, Guard, Reserve, and civilian men and women help maintain our nation's security. Together, with Air Force retirees subject to recall to active duty, they represent the foundation of our warfighting capability and serve as the key factor in our deterrence equation.

We will continue to put first priority on providing these quality people with a positive environment which protects their health and safety, includes adequate housing, ensures adequate financial support, and maintains the many support programs which meet the special needs of our Air Force families. While this commitment to our people may present some challenges in today's fiscal environment, it is the only way the Air Force can do its job.

Our Air Force people, both military and civilian, expect and deserve a competitive compensation package, including adequate pay and allowances; either adequate government quarters or full entitlement to variable housing allowances; appropriate permanent change of station reimbursements; quality health care; and other benefits. Unfortunately, due to a number of pay caps since the early 1980s, which have held pay raises below private sector wage growth, the comparability gap has grown to 10.1 percent--even after the positive 4.3 percent pay raise this past January. For FY 90, we urge the Congress to continue this positive initiative with a 3.6 percent military pay increase. Without such basic entitlements, we will see a decline in the success of our recruiting efforts in the competitive marketplace.

Although retention remains relatively strong in most career specialties, there is a serious decline in pilot retention rates. The pilot Cumulative Continuation Rate (CCR) has dropped from a high of 78 percent in FY 83 to 40 percent by the second quarter of FY 89. Last year we lost nearly 800 more pilots than we produced, and the pilot retention forecast for FY 89 falls well short of the 63 percent retention rate we need to maintain a healthy, experienced force.

While we are undertaking many leadership and management initiatives to redress pilot concerns, it is obvious that monetary incentives must also be employed to reverse this downward trend. We are currently implementing the new Aviator Continuation Pay (ACP) by targeting it to the retention sensitive specialties, as directed by Congress. We forecast positive results and request continued congressional support for the bonus program, including an expansion of eligibility payment years. While the bonus represents a near-term fix, Aviation Career Incentive Pay (ACIP) remains the foundation of special aviator compensation and, as such, needs adjustment to restore the purchasing power lost since it was last raised in 1981.

In addition to focusing intensely on pilot retention problems, we are trying to minimize the impact of drawdowns in the officer and enlisted force. These reductions have been the result of budgetary and congressional direction. While we are using voluntary actions to the extent possible, we have been forced to use some involuntary separation actions. These reductions have involved difficult decisions, and we remain concerned about the long-term impact on the morale and combat readiness of the force.

STRATEGIC FORCES

Intercontinental Ballistic Missiles (ICBMs) are the most responsive element of the strategic Triad, combining accuracy and high daily alert rates to hold time-urgent, hardened, Soviet warfighting assets at risk. The foundation of our ICBM modernization program is the Peacekeeper missile. Full operational capability for the first 50 Peacekeeper missiles in existing silos was achieved on schedule in December 1988, and the FY 90/91 Budget continues development of a rail garrison basing mode. Current plans are to deploy the 50 operational Peacekeepers in rail garrison. Deploying the Peacekeeper day-to-day in secure areas and dispersing it when in the national interest to do so will diversify our strategic forces, enhance deterrence and promote stability. The development of the Small ICBM (SICBM) will continue towards an operational deployment in the late 1990s. The inherent operational flexibility of this missile, coupled with the survivability of its mobile basing mode, make the SICBM the obvious next step in enhancing strategic stability and deterring nuclear war.

Bomber modernization, through deployment of the B-1B and B-2 penetrating bombers and the transition of the B-52H force to a standoff cruise missile role, will counter existing and projected Soviet air defense improvements. Each aircraft has an essential and diverse mission. Cruise missiles launched from outside defended areas, B-1Bs penetrating at low altitude and high speed, and B-2s penetrating at high and low altitudes will severely stress the Soviet air defense system.

The final B-1B was delivered ahead of schedule in April 1988. The FY 90/91 Budget will include funds to integrate a radar warning receiver into the defensive avionics suite to improve the B-1B's capability to penetrate Soviet air defenses. The first B-2 was unveiled in November 1988 and will begin flight testing this year. The first operational aircraft will be assigned to Whiteman AFB, Missouri.

The Air Force released in December 1988 updated program costs for the B-2 of $42.5 billion in baseline 1981 dollars, which equates to a then year figure of $68.1 billion. The program cost figure is under review within the Department of Defense, reflecting updated figures that resulted from a delay in full rate production. The delay was caused by a combination of reduced funding allocations due to budgetary constraints, and a desire to ensure that adequate flight test results are available before commitment to high rate production, and not to any technical problems with the program. The development cost of the B-2 has been substantially higher than the B-1B, reflecting the major technological advances involved; however, the production cost is expected to be only modestly higher, in constant dollars. To give this cost issue some perspective, the contribution of the B-2 to the strategic Triad should be considered. In terms of acquisition cost per generated warhead, the B-2 cost similar to the B-1, less expensive than modern ICBMs, and somewhat more expensive than SLBMs.

The continued modernization of the bomber force is even more critical when viewed against the background of a potential strategic arms reductions agreement. One of the principle virtues of the Strategic Arms Reduction Talks (START) will be a movement away from "fast-flying" ballistic missile warheads to more stabilizing bomber-delivered warheads.

Strategic defensive forces enhance deterrence by providing integrated tactical warning and attack assessment capabilities to detect, identify, and characterize attacks against North America. We are continuing modernization of our ballistic missile and atmospheric warning systems. Our defense capability against the air-breathing threat will improve with enhancements to the E-3A Airborne Warning and Control System (AWACS) and the continued deployment of the F-16 air defense aircraft with its improved all-weather weapons employment capability.

Improvements in our strategic command, control, and communications (C^3) are necessary because this area is so vital to our strategic deterrent posture. We have accomplished a great deal in improving our capability in C^3 in the last several years, but this trend must continue if we are to keep pace with the Soviet offensive threat.

READINESS AND SUSTAINABILITY

While modernization programs and force structure gain the most public interest, effective warfighting capability demands equal attention to necessary investments in readiness and sustainability.

Over the past 8 years, support for these less glamorous, but essential, programs has created the most ready, most effective air force on earth. Aircraft mission capable rates peaked at an all-time high across the Air Force in 1988. Peacetime training programs have achieved degrees of realism previously impossible. Sustainment stocks have been substantially improved with modernized weapons to replace the Vietnam-era systems with which we entered the 1980s.

But readiness and sustainability require continued support and have already begun to show the effects of the inconsistent funding pattern seen over the past few years. While the Air Force has placed a high priority on protecting readiness, the deep cuts we have sustained have made it impossible to protect all the elements that go into sustaining the readiness of our forces.

Beyond affecting immediate capabilities, cuts in these accounts impair the long-term health of our forces. Reductions in the military construction account, for example, result in deteriorating facilities and in slowing the replacement rate for obsolete buildings. Cuts in depot repair/modification, over time, result in fewer mission capable aircraft and, as war readiness spares kits/base-level self-sufficiency spares stocks are withdrawn to maintain the peacetime flying program, sustainability suffers further.

FORCE PROJECTION

US force projection capability is essential to protect US national security interests. Our national military strategy demands a capability to respond to global challenges. The proper balance among airlift, sealift, and prepositioning enables us to deploy, employ, and sustain forces in a timely manner. Although sealift provides the greater part of US sustainment capability, there is no substitute for the speed and flexibility of airlift forces.

By the end of 1989, our programs to modify aircraft, increase spares, and procure new cargo and tanker aircraft will nearly double the strategic airlift capability of 1980. Despite these improvements, airlift capability still remains significantly below the nation's need.

The FY 90/91 program continues procurement of the cost-effective C-17 cargo aircraft. The C-17 will modernize the strategic airlift force and increase theater airlift capability. For the first time, we will field a strategic airlift aircraft with the ability to deliver a full range of Army equipment directly where needed, even into austere airfields.

Because strategic and conventional force air refueling requirements increasingly outstrip current capacity, we must continue to increase air refueling capability. The ongoing program to modernize the KC-135 tanker will result in a 50-percent increase in fuel offload capability at a fraction of the cost of a new aircraft.

The Air Force is intensifying efforts to increase the effectiveness of all force projection assets in support of national objectives. These forces are needed to meet the threat across the spectrum from low-intensity conflict and contingency operations to the highest levels of conflict.

TACTICAL/THEATER FORCES

Soviet theater capabilities have continued to grow despite announced changes in doctrine and in force structure. Their forces, which now include highly maneuverable fighters armed with look-down/shoot down ordnance, are increasingly comparable to current Air Force systems. These advanced aircraft threaten the Air Force's ability to provide the air superiority which gives freedom of action to all allied theater forces.

Two high-priority programs--the Advanced Tactical Fighter (ATF) and the Advanced Medium Range Air-to-Air Missile (AMRAAM)--will enable our forces to maintain a technical edge on our adversaries. The ATF will incorporate low-observable technology, supersonic cruise and maneuver, and advanced avionics to yield lethality and survivability far superior to any current aircraft. Development continues toward a planned Initial Operational Capability (IOC) in the latter half of the 90s. The AMRAAM, now in low-rate production, is undergoing an extensive test program and achieving a success rate near 80 percent. The test program is scheduled for completion in time to support a full-rate production decision in the fall of 1990. This missile will provide a launch-and-maneuver, multiple-kills-per-engagement capability necessary against numerically superior forces as well as improved resistance to electronic countermeasures (ECM) over existing radar missiles.

Modernization efforts continue in ground attack forces as well. The F-15E will reach IOC in September 1989, an important step toward filling urgently required all-weather deep penetration capability. The LANTIRN navigation/targeting system will also reach IOC in 1989, enabling F-15Es and F-16 C/Ds to conduct night interdiction missions. This capability will provide our theater commanders a highly effective means of disrupting massed mechanized forces during the march to combat and, where necessary, in the close battle.

The Air Force has requested funds to procure 150 multi-role F-16s in FY 90. This aircraft provides a solid example of the strength of the Air Force's three-fold approach to building combat capability: its mission-capable rate is about 80 percent, and the F-16s now being procured will enjoy all-weather attack and air superiority capabilities far beyond those of earlier models.

The Air Force places a high priority on close air support/battlefield air interdiction (CAS/BAI) to provide direct support to the AirLand battle. The increased enemy air defense threat and the Follow on Forces Attack (FOFA) concept of operations have resulted in the need to replace the A-l0A. The decision on acquiring new A-16s, specialized for this role, will be approached through the defense acquisition board process. In the interim, the budget contains the funds needed to upgrade three wings of A-10s for continuing use for the close in battle and for longer term use as low intensity conflict aircraft and as forward air control platforms. The budget also contains funds to upgrade two wings of F-16s to a configuration more specialized for the CAS and BAI roles.

We continue to modernize and expand the capabilities of our special operations forces (SOF). Working closely with the Office of the Secretary of Defense, US Special Operations Command, and the other Services, the Air Force has focused on fielding SOF to meet the specialized needs of theater commanders across all levels of conflict.

While these systems will provide capabilities beyond those of current forces, it is important to note that the downturn in defense budgets, which has occurred over the past 4 years, has forced the Air Force to reduce its fighter force structure program from 37 wings to 35. Such a reduction entails an increased risk to the Air Force's ability to play its assigned part in achieving the Nation's defense goals in a major conflict.

SPACE

The space launch recovery effort, which has been strongly supported by Congress, bore fruit in 1988 with the successful launches of all our existing unmanned boosters--the Atlas, Titan II, Scout, Delta, and Titan 34D--and the return to flight status of the space shuttle. In 1989, revitalized launch operations will continue with the advent of the Titan IV to replace the Titan 34D as our heaviest unmanned vehicle and with the first flight of the Delta II. The continuation of our other launch vehicle programs, Titan II and Atlas II, are also critical to lift into orbit the nation's highest priority national security payloads.

Air Force space-based support for terrestrial forces continues to expand. The force enhancement capabilities of space forces will be further strengthened by the introduction of the Navstar Global Positioning System (GPS), a navigational satellite which had its first operational launch aboard a Delta II in 1989. This system is scheduled to reach full operational capability in 1992.

The Air Force continues to conduct space-based surveillance to provide timely and unambiguous tactical warning and attack assessment to the National Command Authorities (NCA) and combatant commanders and to provide space-based weather data to a wide range of users. The Boost-phase Surveillance and Tracking System and the Space-based Surveillance and Tracking System, which are now a part of the Strategic Defense Initiative, will provide even greater capability in the future to warn the NCA of hostile actions by potential adversaries. The Air Force is also continuing to develop and field multi-user communications systems to support both strategic and tactical communications requirements. Wide-area surveillance from space is now both technically feasible and operationally necessary to support air defense and theater operations. The Air Force is actively exploring concepts for a space-based radar to fill these requirements.

Space power will be as decisive in future conflict as air power is today. The Air Force must ensure that space-based capabilities are fully exploited within the constraints of technology, policy, and cost-effectiveness and are fully integrated into all elements of our combat forces.

Over the past year, the Air Force conducted a major assessment of its current space capabilities and future requirements, and is defining a roadmap to guide the long-term growth of our space forces in achieving these goals.

CONCLUSION

The Air Force FY 90/91 Budget balances the need for quality people and quality forces. However, without the stability in budgeting that only Congress can provide, we cannot deliver quality, programmed forces in sufficient quantity at acceptable costs and with prudent risk.

Numerous studies have shown that stability in defense spending is the most effective method for improving management and reducing costs. The unstable funding environment of the last several years disrupts long-term defense programs. Similarly, the timeliness of the Authorization and Appropriations Bills, which directly affect all military operations, is crucial to better planning.

We are prepared to work with the Congress to ensure the United States Air Force remains a formidable aerospace force underwriting the national military strategy, today and in the future.

PREPARED STATEMENT OF SENATOR D'AMATO

Senator **Inouye**. I thank you very much, General Welch. Before I start my questions, I have an opening statement from Senator D'Amato that I would like to put in the record at this time.

[The statement follows:]

Statement of Senator Alfonse D'Amato

Thank you, Mr. Chairman. The Bush administration, currently engaged in a strategic review, has inherited a strategic arms reductions talks framework from the Reagan administration. The centerpiece of this framework is an overall ceiling of 6,000 warheads for each side, a number considerably below our present force.

I am curious as to whether the Air Force has looked into the implications of such a ceiling for our strategic Triad, especially the ICBM leg. Presently, the strategic pie is carved up in such a way that submarines carry roughly 50 percent of our warheads while the remaining 50 percent is split evenly between bombers and ICBM's. Assuming this ratio would be maintained under a start agreement, ICBM's would carry 1,500 warheads.

In the wake of a START agreement, what would our ICBM force look like? If we emphasized lethality, aim points would shrink alarmingly. If we emphasized dispersal, lethality would suffer significantly. Where does the rail garrison MX and the Midgetman small ICBM fit into this equation? My hope is that our witnesses today can begin to address the question of force structure and arms control.

Thank you, Mr. Chairman.

SMALL ICBM

Senator **Inouye**. Mr. Secretary, your testimony before the Armed Services Committee has been interpreted as indicating that $100 million may not be quite adequate for the small ICBM program.

Is it adequate or inadequate?

Dr. **Rice**. Mr. Chairman, we are continuing to examine the program needs for the small ICBM. But I think I can give you this morning at least some tentative conclusions.

The funding that is laid out in the 5-year defense program, as I think you are aware, does not lead to a 1997 IOC for the missile. So, there do need to be adjustments in that profile over the time from 1990 through 1997.

Our current judgment, however, is that we do not need additional funds for fiscal years 1990 and 1991, but that it will be necessary to increase the funds that are provided in the 1992 through 1995 period, in order to meet the 1997 IOC for the program.

Senator INOUYE. The questions I am asking on the MX rail garrison and the small ICBM are not intended to embarrass anyone, but are just based upon pragmatism, because I am well aware of what is happening, not only in the Congress, but in the subcommittee, on this internal debate as to whether it is MX garrison or small ICBM's.

Do you believe that progress on the small ICBM should be linked to funding for the MX garrison?

Dr. RICE. Mr. Chairman, we believe we have with the adjustment I was alluding to a moment ago, of the provision for the 1997 IOC for the small missile, laid out a strong and supportable program for those two missiles. I would prefer that they each proceed as then laid out in those programs.

That would leave the Peacekeeper-rail garrison system as proposed in President Bush's budget, and the small ICBM proceeding in its current test phases with the funds that are provided in the 1990 and 1991 budgets, and an additional $100 million from fiscal year 1989 funds. We have given you a reprogramming request for that increment.

Those funds will be adequate, though we are continuing to examine that for 1990 and 1991. Then we expect there will be additional funds required for 1992 and beyond.

We believe we can make provision for them within our planning and would thereby get to a 1997 IOC for the small ICBM.

That gives us a phased program, a quite sensible one, in my view, one that I believe will be affordable. I would suggest that, obviously, they have to be considered as a package; but my personal view would be that it would be desirable to avoid explicit linkages. They are obviously quite separate programs, each with their own technical challenges, and should proceed as we have them laid out.

Senator INOUYE. Personally, I find your response to be appropriate. But I am certain you realize that there are members in the Congress, especially in the House, who have indicated that the $100 million is woefully inadequate.

How strongly would you object if the Congress increased the funding for the small ICBM, and obviously at the expense of other Air Force programs?

Dr. RICE. Mr. Chairman, I guess I would content myself with the following statement. That would be simply unnecessary. Provided that the 1997 IOC is one that we can all agree on as a reasonable target for deployment of the system, there then is simply no reason, no need to increase the 1990 funds. Therefore, whatever costs would be paid, whatever opportunity costs would be paid, to take funds out of some other important program to put them into the small ICBM would simply be a waste. It would be a cost that there is no need to pay.

Senator INOUYE. Mr. Secretary, I have suggested to other witnesses that this format is not the most desirable to get information. So, if you find, after reviewing, that the response you may have given is not quite complete or adequate, I hope you would feel free to submit to us any supplemental or supporting addenda.

Dr. RICE. I not only would feel free, Mr. Chairman, but obligated.

RAIL GARRISON

Senator INOUYE. I thank you, sir.

The Air Force has been ready to announce the bases for the MX rail garrison program for several months. Are you in a position now to tell us that those decisions have been made?

Dr. RICE. Actually, Mr. Chairman, if I could, I would like to ask General Welch to comment on that.

General WELCH. Yes, sir.

For all practical purposes, in fact, for all purposes, the evaluation is complete. A recommended list of bases is being prepared for Dr. Rice's consideration. After Dr. Rice makes his selection, a public announcement will be made.

Senator INOUYE. But this is not the proper place for it.

General WELCH. No, sir.

Senator INOUYE. General Welch—no, I don't think I will ask you this question. You have had enough problems with this one. [Laughter.]

B–2 BOMBER

Senator INOUYE. Mr. Secretary, Secretary Cheney has been quoted as saying that there may be technical problems with the B–2 bomber and that it is extremely expensive. On the other hand, General Welch has said that B–2 is a superb example of the inherent technological advantage of a free society and that it combines long-range, efficient cruise, heavy payloads, all altitude penetration capability, accurate delivery, and reliability and maintainability.

What are the problems with the B–2? Is it cost? Technical? Or do you have any doubts about the aircraft's performance?

Dr. RICE. Mr. Chairman, I would like to make several comments about the B–2.

First of all, you cited Secretary Cheney's earlier comments, and I am personally pleased to see that more recently, after having had a chance to visit the program and look into it in more depth, he has emphasized, as I tried to do very briefly in my opening comments, the value of the program.

General Welch's comments, as you referred to, also helped to emphasize the value.

I think it is important to note that the B–2 offers us a mechanism of deterrence across a wider range of conflict than I believe any other system that at least comes to my mind at this point.

So, the value side of it is very high.

Senator INOUYE. You're talking about the B–2, aren't you?

Dr. RICE. Yes; the B–2. Excuse me, sir. Did I say B–1? I certainly meant to say B–2.

Am I on your question? Did you ask me about the B–2?

Senator INOUYE. Uh-huh.

Dr. RICE. Thank you, sir.

Of course, as you know, for the strategic retaliatory mission, for the nuclear mission, it provides us the capability to sustain assured ability to penetrate Soviet air defenses long into the next century.

The B–2 program has taken up major technological challenges. I believe a fair review of that program at this point shows that it is succeeding with those technological challenges.

At the same time, we should all recognize that it still has not entered flight tests. As long as that is the case, as long as we do not yet have in hand the actual evidence from those flight tests, we have to recognize that there are remaining uncertainties. There are some areas of technical challenge still being worked on. The program management people believe that they see solution paths for all of those remaining challenges.

My own reviews of the program at this point persuade me that those are valid arguments and that, in fact, we can see solution paths.

So I think the program is well on its way to success at this point.

The delays that have been added into the program schedule recently are ones that we needed to make for purposes of best acquisition management practice. They also had the effect of relieving the budget in the short run.

The delays I am referring to are the delays in the commitment to high rate production in the program.

What I mean by best acquisition management practice is that we needed a lengthy window for flight testing, for all of the kind of testing—development and early operational testing that needs to be done. We needed to provide, as we should in any major new development program, adequate time for that testing—to be carried out for any problems that the testing is intended to uncover to be uncovered, to be identified, and for the technical solutions to them to be worked out and incorporated into the program before we have made a commitment to the production of too many articles.

That should become a more regularly practice standard in our development efforts, and in our acquisition programs.

I think it would be a fair criticism that in the past, we have proceeded to commit to high rate production without allowing adequate time for testing. It is important that we not commit that kind of error in the B-2 program.

So I think the adjustments that have been made, while also having the effect of saving us money, reflect the reality that we need and should have adequate time for testing. I think the program schedule that we are on now provides for that. And so, we are, in my view, on a path that follows the proper kind of acquisition management procedure.

It has enhanced identification of the current status of the development effort and identification of the remaining areas that need attention, and solution paths for working on them.

Quite clearly, we should support the program going forward into its flight testing phase with, I believe, every expectation that that will be successful, recognizing that until we have flown it, there has to be some remaining uncertainty in our minds.

Senator INOUYE. General Welch, I need not tell you that there are some of my colleagues in both Houses who look upon the cost of the B-2 program as being raw meat for political speeches.

You have indicated in one of your remarks that on the basis of cost per weapon, the B-2 compares favorably with other strategic weapon systems.

Can you explain that to us? I want to give you an opportunity to address this cost problem.

General WELCH. Yes, sir.

Of course, the basic purpose of strategic nuclear deterrent systems is to cover targets in the Soviet Union. The theory quite properly being that if the Soviets are convinced that they would lose great numbers of high value assets in an exchange, they will be deterred from initiating such an exchange.

So the basic issue is how well does a system do at contributing to covering those targets.

The B-2 is uniquely capable of efficiently covering a very wide set of targets. What the B-2 does not do is cover those targets that require prompt response.

About 60 percent of the total targets that we are concerned with do not require prompt response.

The B-2 delivers the most accurate weapons, the highest yield weapons. It has the range to reach the entire spectrum of those targets, and it has the capability to penetrate to that entire spectrum of targets.

So we are talking about a very wide-ranging set of targets that the B-2 addresses efficiently.

In terms of just the raw acquisition cost, including the entire panoply of acquisition costs, including full development costs, which are not properly charged—and including that full development cost—the cost per target covered for the B-2 is something approaching half the cost of covering it with an ICBM.

Senator INOUYE. The cost per target?

General WELCH. The cost per target covered. It is something about half what it costs to cover with an ICBM.

No one has ever questioned the cost efficiency of ICBM's. So it is the total price tag that produces the sticker shock. But, when we consider the value of the system and its ability to cover a wide range of targets with tremendous flexibility and great accuracy, great effectiveness, it is a good buy.

It is about the same as the cost per target of the B-1, by the way. Let me say a bit more about the cost.

Again, to try to put the sticker shock into perspective, because that price tag is fueled by the high development cost of introducing a whole new set of technology into the aerospace industry, the development cost of the B-2 will contribute to our ability to apply that technology to a whole family of future weapons, using STEALTH technology.

In terms of fly-away costs, the B-2 is 22 percent more expensive than the B-1. That is the lowest incremental increase in cost that we have ever seen going from one generation and weapon system to the next. Just as an example, the B-1 costs 390 percent more than a B-52; while a B-2, a new generation of bomber capability, costs only 22 percent more than a B-1.

So, again, when we put all of that in perspective, I think you can see why I say that it is a good value.

Senator INOUYE. Can you present that to us in chart form?

General WELCH. Certainly.

Dr. RICE. Yes, sir.

Senator INOUYE. What you have just testified on.

General WELCH. Certainly.

Senator INOUYE. Also, when you do that, break it into unit costs, fly-away costs, developmental costs, because all of these costs can be very confusing. I notice that sometimes some of my colleagues compare unit costs with fly-away costs for some other system, and it gives a distorted picture.

General **Welch**. Yes, sir.

[The information follows:]

B-2 Bomber cost-per-unit comparisons (fiscal year 1989 dollars)

	Millions of dollars
Average flyaway (manufacturing costs)	273.8
Procurement (flyaway and support)	337.7
Total program cost (procurement and R&D)	497.2
Acquisition (total program cost and MILCON)	509.1

ELECTRONIC COUNTERMEASURES

Senator **Inouye**. The Air Force I believe is considering spending more than $1 billion to improve the electronic countermeasures, the ECM systems, of the B-1B bomber, and for the improvements of the bomber.

Will the B-1B ever meet its original ECM performance requirements?

Dr. **Rice**. Mr. Chairman, I would like to make a comment or two about that and ask General Welch to make some, too.

I believe the number you have there is close to right in terms of what we have identified as the needs for improvements to the B-1 over a period of time.

The original electronic countermeasures gear in the B-1, as it has become well known, did not turn out to meet all of the original requirements.

What we are undertaking now is a different approach to providing the needed capability. The original idea was to try to get multiple kinds of capabilities into a single piece of hardware, and that turned out to be a very difficult technical challenge.

We now have an approach to the problem which brings a radar warning receiver in separately and accomplishes the remaining functions with the originally developed piece of hardware. That will allow us to provide the B-1 with the capabilities it needs to carry out its missions.

But when you ask the question in the precise way that you did, it will not provide the original technical specifications of the original hardware design. It will provide the needed capabilities through a slightly different hardware solution.

Perhaps General Welch would like to add some comments.

General **Welch**. I would just expand slightly.

The original goal was for the system to be able to detect and automatically jam the entire spectrum of threats that might face the B-1. That is about 40 or 50 different kinds of threats.

The fact is that with what we know today, we know we don't know how to do that. We don't know how to automatically detect and jam all those threats. We don't have the capability to do all of them at the same time. So, we have amended our goals. The core system which we are currently testing will automatically detect and jam the top threats, the ones that we are most concerned with, the modern threats.

To handle the remainder of the threats, the system is capable of jamming those threats. It is not capable of automatically detecting and jamming those remaining threats. In order to provide that capability, our solution is to add an independent warning system to detect those threats and use the ALQ-161 to jam those threats.

So, when we add that independent warning system, the B-1 ECM system will indeed have the capabilities required to handle that entire spectrum of threats. But it will do it using a different approach than we originally envisioned, a somewhat less efficient approach, an approach that requires more operator actions. But, nonetheless, it will have the capability to handle that spectrum of threats.

As to the $1 billion that you mentioned, I suppose there is a way to get to that. The independent radar warning system is $489 million for the entire fleet of airplanes. The remaining fixes to bring the system up to core capability are within the $20.5 million ceiling that we have been working at ever since 1981.

Dr. RICE. Mr. Chairman, if I could add, I believe that last point is an important one. The $1 billion does include some other activities that are beyond the original core program. We do believe we can handle the new approach, accomplish what we have been describing to you here today, and to do that within the core program ceiling and within the dollars that have been appropriated for the B-1 program, including what is requested in our current budget.

B-1B

Senator INOUYE. General, using the same measuring stick that we apply to the B-2 in the cost per target, how does the B-1B compare with other strategic weapon systems?

General WELCH. The cost per target covered for the B-1 and the B-2 are almost identical. They are very close. The difference, of course, is that the B-1 does very well at penetrating and covering most targets today. It will be able to cover a number of targets in the future. But, as time goes on, the more highly defended targets will not be appropriate for the B-1.

So, while the B-1 will continue to be very efficient in terms of cost per target covered, it will, over time, become restricted as to which of the targets it can cover.

The good news is that we are going to have more targets than the B-1 can cover anyway. The bad news is that we are going to have more targets than the B-1 can cover. What I'm saying is that we are not short of suitable targets for the B-1.

Senator INOUYE. On that high note of good news I call upon Senator Bumpers.

MIX OF WARHEADS

Senator BUMPERS. Thank you very much, Mr. Chairman.

General Welch, one of the things that has been concerning me in all of these hearings is what kind of mix of warheads we are going to have under the broad framework that has tentatively been agreed on at START, 6,000 warheads. It is estimated that 4,900 of those would be ballistic RV's.

I guess the best way to put it is very simply. We are talking about 21 Trident submarines.

Now, right now, 70 percent of our ballistic RV's are Navy and 30 percent are Air Force. If you use that same percentage under the START arrangement, and the Navy gets 70 percent of those, that is 3,400.

One of the concerns I have is do you think you ought to get 30 percent, that the Air Force, that rail mobile and Midgetman, B-1's, B-2's, whatever, and cruise missiles, are going to each individually count?

Now we get 1,100 free. We go from 6,000 to 4,900. As I say, those are free. But that 4,900, how we go between the Navy and the Air Force on that mix—my concern is this.

Every year we continue to go for long lead items, where I think we are going to be up to appropriating some money this year for the 19th Trident. I don't want us to get into a posture here, all of a sudden, of dismantling Trident submarines in order to come into compliance with some kind of mix, which I do not think has yet been agreed upon.

I would just like to have your comments on that.

General WELCH. Yes, sir.

Within the confines of an open hearing, let me say this about it. The motivation created by the SALT agreement, where the limitation was on delivery vehicles rather than warheads, plus the reduced cost of highly MIRV'ed systems, led us, of course, to create a number of systems that are highly MIRV'ed and to put lots of warheads on each vehicle.

There are some penalties that go with that. You put a lot of eggs into one basket.

The START approach produces almost the opposite motivation. That is, since we count warheads, not vehicles, it would produce the motivation to have the maximum number of vehicles that you can to go with the warheads.

We, in the Joint Chiefs, have looked at a wide range of combinations of sea launched ballistic missiles and ICBM's within the 4,900 limit. There are a lot of combinations that make sense.

All of those combinations would call for something very close to the numbers of Trident submarines that we are talking about.

Obviously, we make up the difference by varying the number of warheads that are carried by the variety of systems. But I would support the need for about the number of Trident submarines that we currently have in the plan. But we do not necessarily—well, I'd better stop there.

Senator BUMPERS. I was going to say that you'd better be careful, General.

General WELCH. I had better stop here in an unclassified forum.

Senator BUMPERS. I didn't mean to be careful because of the classified nature of what you were about to say. I meant because I don't think that mix has been agreed upon yet by the Chiefs or the administration.

General WELCH. Oh, no; what we have looked at is a variety of mixes to insure that there are, indeed, sensible mixes available within the 4,900.

We have looked at seven, for example, seven different mixes within the 4,900, just to assure ourselves that we do not have a great dichotomy between the force structure that we are talking about and the negotiating position that we are using in Geneva. And there is not a dichotomy. It makes logical sense.

Senator **Bumpers**. General Chain the other day said that he could not support a START Treaty that did not include both Midgetman and rail mobile.

I really have a problem with a statement like that. The reason I do is, No. 1, because I am not at all rhapsodic about the idea of trying to buy everybody off with 50 MX's and 300 Midgetmen, or whatever mix somebody decides on for those two.

But would you oppose a START Treaty unless it included the full modernization on mobility, namely the Midgetman and rail mobile?

General **Welch**. I certainly think that we need a land-based mobile ICBM force. I would have to read exactly what General Chain said. I am not aware of that.

But I certainly would not make a condition of my support for the START Treaty having both kinds of mobile missiles.

However, the Soviets do have both kinds of mobile missiles. I think there is very little probability that they will agree to give up either one of them.

I see a lot of operational sense to the two kinds of mobile missiles. But I would not make that a condition for my support for the START Agreement.

Senator **Bumpers**. I appreciate that.

You mentioned transitioning the B-52H to a standoff cruise missile carrier. Given the framework we have just talked about of a START agreement, you've got 95 B-52H's, is that correct?

General **Welch**. Yes, sir.

AIR-LAUNCHED CRUISE MISSILES

Senator **Bumpers**. And you could put 20 ALCM's on each one. That is 1,900 RV's.

How many ALCM carriers would you think would be the optimum number under a 6,000 warhead treaty?

General **Welch**. I have in mind about 90.

Senator **Bumpers**. About 90?

General **Welch**. About 90. However, the count, again, is something that we control.

In the first place, we have not yet negotiated the counting rules for ALCM. There are two different approaches to counting ALCM's. So that has not yet been negotiated.

But, regardless of how that negotiation comes out, we are in charge of deciding how many missiles each bomber will be able to carry. It may require some modifications.

But the negotiating position leaves us that option.

Senator **Bumpers**. Well, now, if you had 90 at 20 ALCM's each, that is 1,800. As I mentioned a moment ago, you get the first 1,100 free. And for every one over 1,100, you are going to start taking up room for ballistic RV's.

Let me tell you that I do not necessarily think that is a bad idea, either. One of the reasons I have had serious reservations about SDI is, as Senator Moynihan said, missiles nowadays do not necessarily come in from space; some of them come in under the Brooklyn Bridge.

I like the cruise missile and I think it is an excellent weapon. But, there again, I am just going back to the mix.

If you had 90 bombers carrying 20 ALCM's, you've got 1,800 warheads; 700 of those are going to count against the 4,900 ballistic RV's.

General WELCH. As I said, we have complete flexibility as to how many cruise missiles we carry on each bomber.

Senator BUMPERS. So you are suggesting that you would not necessarily put 20 on them.

General WELCH. Right. And it depends on how the counting rules come out of the negotiation.

The counting rules may permit us to do that. The counting rules may not. But we have total flexibility to adjust to that.

RAIL MOBILE MX

Senator BUMPERS. General, where are you for selecting bases for the rail mobile MX?

General WELCH. The work is done. We are in the release process. We are in the process of coordinating the release of that information.

Senator INOUYE. Just tell him it is in Arkansas. [Laughter.]

Senator BUMPERS. Well, we have two bases down there that are on the list, the high priority list.

How about the B-2? Where are you on basing it?

General WELCH. Again, on the B-2, we have announced Whiteman because the Milcon is required for Whiteman. The remaining bases are under consideration and will be announced as we require Milcon support for each of those bases.

Senator BUMPERS. Over what period of time would that take, presently?

General WELCH. Well, of course, there is a 1 year slip, as we have deferred the high rate production by 1 year. So I would have to get for you for the record when we will announce the next base. I have in mind 1993. Based on required Milcon support, the next B-2 base will be announced in fiscal year 1993.

The first B-2 is actually delivered to SAC in 1991, and that will be to Whiteman. Two squadrons of B-2's go to Whiteman. So I believe it is 1993.

Senator BUMPERS. Why are you putting two squadrons on one base?

General WELCH. It is much more efficient in terms of maintenance support and support equipment. It significantly reduces the total Milcon costs and the O&M costs.

Whiteman, of course, was selected partly because it is exactly in the middle of the country.

Senator BUMPERS. Well, now, Eaker, in Blytheville, AR, is right in the middle of the country, too, General.

General **Welch**. Well, Whiteman is even more in the middle of the country, sir. [Laughter.]

Senator **Bumpers**. That means we're next, then, huh. [Laughter.]

General **Welch**. Well, certainly bases pretty much down the center of the country give you the maximum warning time from the sea-launched ballistic missile threat, which is what impacts the escape time. But two squadrons of bombers on those centrally located bases are supportable from a safe escape time consideration. And it lowers the cost of basing the entire force.

Senator **Bumpers**. Eaker is very high on the rail mobile list, and while I don't know, I suspect you have already chosen it. But I'll tell you this. Between an MX rail mobile and a B–2 squadron, there would be absolutely no debate in my mind. If you are going to put a rail mobile there and use that as an excuse not to put a B–2 squadron there because you have already taken care of us, I'd rather not do that. I don't want to have to make that decision. I want you to make it. But I'm telling you what I think it ought to be.

General **Welch**. If you'd look at where we put the B–1's, Senator, you can see we put the B–1's right down the center of the country, and there were no political considerations whatsoever. They were solely operational considerations.

Senator **Bumpers**. I must say, ever since the Navy put the TACAMO Squadron in Tinker Air Force Base, I have to take those political statements with a grain of salt. Nobody wanted that squadron over there except a couple of politicians.

General **Welch**. Of course, sir, I don't speak for the Navy.

Senator **Bumpers**. I understand. [Laughter.]

TAC AIR IN KOREA

Senator **Bumpers**. We're talking politics now.

General, just to close out, what is our present Tac Air presence in Korea?

General **Welch**. Well, there is the wing at Kunsan. We have a squadron at Suwon, and we have two squadrons at Osan.

Senator **Bumpers**. What are they?

General **Welch**. They're F–16's.

Senator **Bumpers**. Are they all F–16's?

General **Welch**. No, sir.

Senator **Bumpers**. Don't you have some A–10's there?

General **Welch**. That's right. We have F–16's at Kunsan; we have A–10's at Suwon; we are putting F–16's in to replace F–4's at Osan.

Senator **Bumpers**. How many airplanes does that total?

General **Welch**. I would have to get that for the record, sir. It's a couple of wings. It adds up to a couple of wings of airplanes. But I don't have the exact tail number count.

[The information follows:]

TAC Air Presence in Korea

By the end of fiscal year 1990 the tactical force structure in Korea will consist of 96 F–16s, 18 RF–4Cs, and 12 OA–10s.

STRUCTURE OF THE SOUTH KOREAN AIR FORCE

Senator Bumpers. What is the structure of the South Korean Air Force?

General Welch. About 500 aircraft.

Senator Bumpers. How does that compare with North Korea?

General Welch. In quality?

Senator Bumpers. No, in numbers. We'll come to quality, but let's do numbers first.

General Welch. I would have to get you the numbers for the record.

[The information follows:]

[Deleted.]

General Welch. The North Korean Air Force is quantitatively superior, and is improving qualitatively. But at the current time, the South Korean Air Force is clearly qualitatively better than the North Korean Air Force.

Senator Bumpers. Do you think South Korea, at least from an air standpoint, is capable of defending itself against the North right now?

General Welch. I would think that right now, the additional stability that we bring remains very important today. The South Korean Air Force continues to modernize. As you know, they now have 40 F-16's, and they are embarked on a buy of additional F-16's to modernize their F-5's. They are, at the present time, short of the long-range, high capability interceptor aircraft that we bring to that mix. But they are improving.

We still are an important element of stability between those two sides.

Senator Bumpers. Does North Korea have the MIG-29?

General Welch. Some.

Senator Bumpers. What is most of the other mix? Do you know, just off-hand?

General Welch. In North Korea?

Senator Bumpers. Yes.

General Welch. It's still primarily the MIG-21's and the MIG-19's, that class of airplane.

We can get you the specifics of these.

Senator Bumpers. I'd like to have all of those comparisons, General, if you will.

General Welch. Yes; let me give you the specifics for the record.

Senator Bumpers. Please.

[The information follows:]

MIG-29 North Korea

The North Korean Air Force has a small nucleus of modern fighter aircraft of Soviet design, including [deleted] MIG-29/FULCRUM, [deleted] MIG-23/FLOGGER, and [deleted] Su-25/FROGFOOT. [Deleted.] Older generation fighters in the North Korean inventory include [deleted] MIG-21/FISHBED, [deleted] Su-7/FITTER, [deleted] MIG-19/FARMER, [deleted] MIG-21/FRESCO, and [deleted] MIG-15/FAGOT/MIDGET. North Korea also possesses [deleted] antiquated IL-28/BEAGLE bombers.

Dr. Rice. Senator Bumpers, could I interject some thoughts at this point?

Senator BUMPERS. Certainly.

Dr. RICE. I think it is also important in thinking about the Air Force presence, the U.S. military presence generally in Korea, to put it in the larger context of the Pacific Basin and Theater.

It is not just a matter of direct support of our commitment to South Korea but also a demonstration of our interests and concerns throughout that theater and that region. I would just urge you, as you think about that issue, to take that larger context into account, as well as the direct comparison of South Korean and North Korean military capabilities.

Senator BUMPERS. Mr. Secretary, I have thought about it for 2 years now, and I have concluded in my own mind that our presence there is not worth the $2 billion a year we are spending to stay there.

I think there are some geopolitical considerations that even make it weightier than it already is, and that is this. For example, when a golf course can become a national issue in Korea, where every dissident in Korea has an axe to grind with anybody and uses the United States as the focal point of their hostility, which always happens, and when you consider that South Korea has 2.5 times as many people as North Korea, their army is very similar in size; qualitatively, in my opinion, their air force is vastly superior to North Korea. They have a GNP seven times larger than North Korea, and they have a $10 billion annual trade deficit against the United States.

Now, if they are not capable of taking care of themselves today, when will they be? Does this mean that we are going to be there forever?

Dr. RICE. Senator, one last comment. While speaking just for the Air Force component, I think we should be careful about the cost issues. We should get you some numbers if you are interested in getting into this more deeply. But I believe it would be a fair comment that, given the support that the South Koreans do provide, it, in fact, costs us less to keep a wing of fighters in South Korea than it would to bring them back to the United States and keep them here.

But that is a matter that we could look into in more depth for you, if you are interested.

Senator BUMPERS. Well, of course, the debate would not necessarily focus on cost, but that would be an element and I would like to know.

[The information follows:]

AIR FORCE COMPONENT

Normally, it costs more to operate an aircraft squadron overseas than in the CONUS. For example, a 24 PAA squadron of F-16s, based stateside, has annual operating and support costs of about $56M while a similar squadron overseas costs $59M. This increase in cost is due to several things including higher PCS factors, additional pay for overseas station allowances, increased maintenance requirements because of the way the aircraft are deployed, and greater security requirements. In addition, overseas bases have traditionally higher installation support costs for real property maintenance, communications, and base operating support. In Korea, however, the cost differences between overseas and CONUS operations are mitigated by services/benefits provided to our forces by the government of Korea. These operating expense offsets include the Korean Service Corps which provides manual labor to service the bases. Additional support is received through the Combined Defense Improvement Project (CDIP) which funds defense related construction projects.

Senator BUMPERS. I forget his name, but the Korean commander in charge of our forces there gave us the $2 billion figure in this very subcommittee less than 2 months ago. If there are offsetting figures—for example, on maintaining our Air Force there—which reduce that figure, compared to what it would be if those planes were in the United States, I would like to get it.

General Menetry—is that his name?

General WELCH. Yes.

Senator BUMPERS. He was the General who testified on this subject.

General, one final question. You mentioned the B-52's, but not the B-52G's. How many G's do we have left and what is your plan for them?

General WELCH. At the current time, we have about 96 B-52G's in the strategic nuclear role, and we have, I believe, four squadrons in the conventional role.

Our plan over time is to maintain about three squadrons in a purely conventional role for the foreseeable future, and to phase out the B-52G's from the nuclear role as the B-2 comes on-board.

So we would eventually be down to a force of strategic heavy nuclear bombers of just B-52H's, B-1's, and B-2's, and a relatively small number, three squadrons, of B-52G's in a purely conventional role in support of theater commanders.

Senator BUMPERS. Mr. Secretary and General, I look forward to getting all of the information you care to supply me on this issue of staying in Korea or getting out of Korea.

Thank you, Mr. Chairman.

[The information follows:]

KOREAN ISSUE

The US forces deployed to Korea provide a significant contribution to deterrence of a North Korean attack against the Republic of Korea and an unequivocal demonstration of US resolve to support and defend its allies in Northeast Asia. We must consider our commitment to the defense of Korea in concert with our overall national security interests in Northeast Asia. Given our national interest in denying key Pacific rim industrial bases to potential adversaries, the US military presence in Korea and close US-ROK relations are vital to US national security.

The USAF units deployed to Korea are designated to support specific scenario dependent plans and are absolutely critical to deterrence of renewed aggression and to the success of combat operations. Without USAF forces, our combined warfighting capability would be greatly diminished, especially in the ground attack area.

During the past decade, the Republic of Korea has achieved considerable progress toward self-reliance. As the South Korean Air Force continues to increase its capabilities toward an adequate self defense capability, the USAF force level will be reevaluated within the framework of our Pacific strategy. The military balance equation with regard to the presence or withdrawal of US forces is a military staff issue and the State Department should be consulted concerning the geo-political position.

INSTABILITY OF CHINA

Senator INOUYE. Thank you, Senator Bumpers.

Mr. Secretary and General, I think it would be well that you take Senator Bumpers' suggestion very seriously. I am aware that there are several very important members of this Committee who are supportive of the thrust of Senator Bumpers' proposal.

Keeping that in mind, since this will be an important part of the overall defense debate, and also realizing that you are not in the position to make any foreign policy decisions, would you call upon your colleagues in the foreign policy section and submit the following inquiry.

Should the present instability in China have an important part in the debate? If so, should this instability be favorable to withdrawal or unfavorable to withdrawal? After all, China is a neighbor of Korea.

[The information follows:]

INSTABILITY OF CHINA

The current situation in China should be considered in assessing the advisability of withdrawing US forces from Korea. The development of US-China relations over the past two decades has allowed consultation on a variety of regional security issues. China has shared US interest in a stable Korean Peninsula and Chinese leaders have used their influence to encourage North Korean restraint.

If current events in China result in long-term control by a leadership more hostile to US interests, they may be less likely to dissuade hostile North Korean actions. This could act to create a more unstable Korean Peninsula.

It is, therefore, our judgment that it would be imprudent to take action to reduce US forces in Korea at least until the situation in China has stabilized to a point that we can have confidence in the likely continuity of Chinese policy. This opinion reflects a military staff review and you would need to talk to State to obtain a geopolitical assessment.

TACTICAL COMBAT AIRCRAFT

Senator INOUYE. General Welch, recently President Bush made a very dramatic proposal to NATO, and the proposal called for, among other things, the elimination of 800 tactical combat aircraft and 350 combat helicopters.

These were supposed to be either destroyed in Central Europe by 1993 or withdrawn back to the United States, I believe.

How many Air Force aircraft would be affected by this?

General WELCH. The proposal, as you know, is to draw the total NATO combat aircraft down by 15 percent, if the Soviets agree to come down to that same level.

The proposal does not define and that will have to be negotiated which NATO aircraft will draw down. If we were to draw down 15 percent, that is about 150 airplanes. But we do not know yet at this time whether we would indeed draw down 15 percent of our aircraft. That is just a going-in assumption. But that would be about 150 aircraft, combat aircraft of all kinds.

There are still negotiations to be completed on definitions of combat aircraft. We have our definition. The Soviets have their definition. That has yet to be agreed on.

Senator INOUYE. If you go on that assumption, I would assume also that there is some money in this fiscal year 1990 budget for those aircraft.

General WELCH. There is no money in the fiscal year 1990 budget in procurement for those aircraft in that we obviously would elect to draw down the older aircraft and to continue the modernization of the force. In fact, modernization would become more important as the numbers get smaller.

There is certainly O&M money in the out-year budget. But the first impact that we would see of this would be 1993 or so. And, of course, O&M funding for 1993 is not yet reflected in the budget.

Senator **Inouye**. There is no acquisition and procurement money in here.

General **Welch**. I cannot think of any money in the 1990 or 1991 budget that has to do with this proposal.

Senator **Inouye**. General, the weapon inventory requirements are normally based on quantitative and qualitative estimates of enemy weapon systems. Why did the Air Force requirement for the infrared Maverick missile decrease from a stated requirement of more than 60,000 last year to less than one-half in the current budget presentation?

General **Welch**. Well, as you know, we have, for a number of years, been pursuing some more efficient armor killing weapons, multiple kill per pass weapons.

Until such time as those weapons are thoroughly tested and available to us, our principal armor killing weapon is the infrared Maverick. We are simply, in light of the budget that we are currently dealing with, accepting a gap in the production of that kind of capability.

So, the number of tanks has not been reduced yet, although there is a promise that it will be reduced. So the requirement for armor killing weapons may be reduced in the future. But that really was not part of this decision. This was a budget decision.

Senator **Inouye**. Did you also include in that decision-making process your hope to have two sources?

General **Welch**. We did. Again, two sources is highly desirable, as you well understand. We have had some startling successes in bringing down the prices of systems with two sources. The engine is a case in point.

But, again, the total numbers of Maverick that we were planning to procure just became unaffordable in light of the total munitions program that we have.

Quite frankly, we are short of modern munitions. We are not short of total munitions.

Senator **Inouye**. I have many, many other questions, and most of them may touch upon classified responses, so I will submit them to you.

I just have one final question that I would like to bring out publicly. It may not be in your shop because it has some policy implications.

There are some of us on this committee who were concerned that decisions based purely upon cost and performance might cause the demise of some of our companies. We speak of the industrial base.

Should that concern be a part of our consideration? Now I am not naming companies, but I am certain that you know what I'm talking about.

Dr. **Rice**. Mr. Chairman, let me try to respond to your question in this way, taking due notice of the sensitive aspects of it that you alluded to.

Our concern for the industrial base is an important one. We have a number of aspects to that concern. Obviously some of it relates to maintaining capacity with a variety of kinds of things that we have to produce. Some of it relates to specialized capability. Some of it relates to the advanced technology components of the base. Some of it relates to concerns having to do with certain kinds of production capabilities moving offshore and so on.

All of this needs to be examined as a whole.

There are efforts to try to make a more comprehensive examination of that underway within the Department of Defense. The Office of the Under Secretary of Defense for Acquisition is engaged in such efforts, and we certainly intend to support that within the Air Force. We are considering whether, in fact, there are some initiatives that we ought to undertake at the Air Force level beyond that effort yet.

Having said that, I think we have to recognize, however, that it is inevitable that capacity was built in the aerospace industry during the buildup years, in the early 1980's, beyond that which can conceivably be sustained at the levels of budgets that we are looking at for the end of the 1980's and into the early 1990's.

So, without presuming any specific case that you may have in mind, I do think we are going to have to face the reality that there is inevitably excess capacity in that total base today.

Senator INOUYE. I thank you very much.

If you wish to augment that response, please feel free to do so.

Dr. RICE. Thank you.

Senator INOUYE. I have been advised that Senator Bumpers has some additional questions.

POST-START FORCE STRUCTURE

Senator BUMPERS. Yes, just a couple of short questions.

General Welch, recently at a breakfast, you suggested—and here is your statement—I'm sorry, this is General Chain. General Chain said, "My ideal post-START force structure would be 21 Trident boats with 18 tubes, not 24 tubes." He goes on, and I will not belabor that.

How would you verify or how would the Soviets verify concreting six of the 24 tubes on board?

General WELCH. There are several proposals for how you might go to below 192. I guess you really ought to ask the Navy those questions.

But I do not see a verification problem in that we are proposing similar kinds of things for B-52's, which are much more difficult to verify. We are quite willing to allow in the Air Force whatever kind of intrusive inspection is required to verify that to include physical access to the B-52.

That is just one of the prices that you pay for verifiable arms control agreements. I really do not think it is particularly difficult to physically verify either the capability, the number of tubes, if that is the approach, or the number of warheads the missiles can carry, if that is the approach. And either one of those approaches is available.

But I would leave to the Navy the choice of how they would limit the number of warheads on a submarine.

TRIDENT PROGRAM

Senator **Bumpers**. Well, I don't want to put you into the posture of having to defend the Navy or take the Navy's position or anything else. But, obviously, General Chain is concerned, as am I, about where we are going with the Trident program. He is obviously trying to leave a lot more wiggle room for the Air Force, and I don't blame him for that. But I don't see how we can justify continuing to build a $2 billion submarine with 24 launch tubes and proceeding to concrete six of them as soon as they come out of the shipyards.

Second, I am not quite as confident as you are about how easily that might be verified. I think there is going to be an awful lot of on-site verification under the START Treaty when it is finally concluded, and I don't have any problem with that. I think that is a real confidence-building measure. We have already seen that in the INF Treaty.

But as long as you have six launch tubes on there, I just think you are going to have a very difficult time getting the Soviets to accept an annual verification of the fact that they are inoperative.

As I say, I am just raising this whole spectrum of issues, Mr. Secretary, because I think it is a really knotty problem. I think one of the problems we have at the START Talks is we still have not determined what kind of mix we want. We have agreed on the 6,000 limit of warheads—4,900 ballistic RV's. We have done some of those sub-limits, but we still have not figured out what we want to complement, to make that mix up.

I think we ought to get cracking on that.

I mean, we cannot sit here and start buying long-lead items for the 21st Trident submarine when we may not ever need more than 18 and even six of the launch tubes on the 18 will be inoperative.

So you can see that our job is very difficult unless we know, either in a classified way or in an open way, what we are talking about.

Some of us, including the chairman of this subcommittee, are going to Geneva in the latter part of this month as a part of the Senate Arms Control Observer Group, and maybe we'll learn a little bit more there. I don't know.

General **Welch**. I would certainly agree that it is a very complex matter. Let me make one more stab at defending the Trident program, although I find myself in a strange position here this morning.

Senator **Bumpers**. Listen, you are preaching to the saved. I am a great proponent of the Trident.

General **Welch**. Well, let me say this.

As I said earlier, it was the START approach and the cost approach that led us to putting in so many warheads on a single vehicle. I mean the SALT approach here, excuse me. The SALT approach led to the high-MIRV's on the Trident missile, and cost considerations led to so many tubes on each Trident submarine.

If you look back in history, you will find that the Navy did not want that many tubes on the Trident submarine. They were driven to it by cost considerations.

But given that that is the kind of submarine that has been designed, and given that the two ocean Navy levies requirements for certain numbers, minimum numbers of submarines, for survivability reasons, it is obviously far less expensive to continue to produce that proven design and put fewer warheads on it, however one might choose to put fewer warheads on it. There are ways other than pouring concrete in tubes.

But, however one might choose to do that, it is far less costly to continue to produce those submarines and put fewer warheads on them than it is to design a new, smaller submarine and to field that submarine.

So, given that we start from where we are and not with a blank sheet of paper, I think that remains the lowest cost approach to fielding a Trident force of adequate size for survivability, and yet reducing the number of warheads that are carried on each one of those Trident submarines, because a START approach would encourage you to do that.

I am not trying to simplify the decision process. It is a very complex decision process, and I agree with that. We are all frustrated by the chicken and egg issue.

Yes, we could set out today and define very precisely the kind of force structure that we would plan to have within that 4,900 or within the 6,000, however we want to do that. But the fact is the nature of that force structure will be driven, to some extent, by the outcome of the negotiations; that is, what are exactly the counting rules, what precisely are the verification requirements?

So we are moving down those two paths together. The negotiations drive our solutions to the force structure problem. And our desires and our needs in the force structure drive the negotiations. But neither one is the pure driver of the other.

What we have done is examine in considerable detail the options that are available to us under the rules that we are currently negotiating to assure ourselves that we have reasonable, sensible options. But I really do not think we are in position to pick that option until we have a clear view of exactly what the rules are going to be.

It is impacted not only by counting rules, it is impacted by verification rules.

Senator BUMPERS. Well, we are indeed in a chicken or egg situation here.

General WELCH. Yes, sir; we are. In fact, the chicken and the egg are going to have to come along together.

Dr. RICE. Senator, if I could just add this thought, General Welch has gotten in the last part of his comments very well into what I wanted to cover.

I think as the administration proceeds with its preparations for the resumption of START, it is going to be critically important to keep open a range of options for the very kinds of reasons that General Welch has been referring to. It seems to me that, so far, a lot of good homework has been done on defining that range of options, understanding the edges of the envelope within which there is negotiating room, as the START process proceeds.

It seems to me that if you want to charge us with something, it should be to send up an alert if the process of holding open options, including, of course, what has to be decided in each annual budget, is beginning to cross over the boundaries, the edges, of that envelope. I don't think that is happening at this point, for all the reasons that General Welch has been describing.

Certainly, if negotiations dragged on for a couple of years longer and it turned out that we were still talking about the 6,000 limits and all the aspects of it that you have been referring to, it is possible that we could get into that kind of corner and then would have to make some choices. But I don't think we are at that place today.

So I think we can continue to keep our options open as we are doing our homework and setting negotiating strategy for START.

D–5 WARHEADS

Senator **BUMPERS**. Have we tested the D-5 with less than eight warheads, or do you know? Then again, that is a Navy question.

General **WELCH**. Well, let me say it this way. I don't know specifically, but I would be astonished if we have not, because there is no reason to put that number of warheads——

Senator **BUMPERS**. Initially.

General **WELCH** [continuing]. Initially for all the tests.

Senator **BUMPERS**. Well, I know that at one time they were going to test it with 12. Quite frankly, I got that stopped because I did not think there was any sense at all in that. You know how that goes: Once you test, you are in big difficulty with your adversary about what the capability is and what is probably on it. So we were able to get them stopped from testing it with 12.

But my personal choice right now would be the D–5, with five or six warheads, rather than having six inoperative tubes, with, say, eight warheads on it, or something.

General **WELCH**. That is certainly a viable approach.

DEFENSE OVERSEAS SPENDING

Senator **BUMPERS**. Yes.

Mr. Chairman, I would like to insert into the record—and if this is a part of the record, I want to isolate this—one of the pages in the Defense Department's budget justification for 1990 and 1991. Defense oversees spending by country. The summary on our total cost in Korea is broken down in considerable detail, and I would like to insert that into the record.

Senator **INOUYE**. Without objection, it is so ordered.

Senator **BUMPERS**. Thank you, Mr. Chairman.

[The information follows:]

FISCAL YEAR 1990/FISCAL YEAR 1991 BIENNIAL BUDGET COUNTRY SUMMARY

[Dollars in millions]

Country—Korea	Fiscal year		
	1989	1990	1991
Military personnel:			
Army	1,023.0	1,053.4	1,100.6
Navy	24.4	24.7	25.6

FISCAL YEAR 1990/FISCAL YEAR 1991 BIENNIAL BUDGET COUNTRY SUMMARY—Continued

[Dollars in millions]

Country—Korea	Fiscal year		
	1989	1990	1991
Air Force	460.0	467.8	478.6
Total	1,507.4	1,545.9	1,604.8
Operation and maintenance:			
Army	587.3	695.7	724.4
Navy	2.8	3.1	3.1
Air Force	185.7	206.2	212.6
Defense agencies	26.3	28.7	30.6
Total	802.1	933.7	970.7
Family housing operations:			
Army	18.1	19.9	19.7
Navy	.5	.6	.6
Air Force	2.1	5.2	5.7
Defense agencies			
Total	20.7	25.7	26.0
Family housing construction: Army	4.4	1.3	
Military construction:			
Army	33.7	50.6	89.6
Air Force	34.9	31.7	38.2
Defense agencies	7.2	8.7	15.0
Total	75.8	91.0	142.8
Army	1,666.5	1,820.9	1,934.3
Navy	27.7	28.4	29.3
Air Force	682.7	710.9	735.1
Defense agencies	33.5	37.4	45.6
Total	2,410.4	2,597.6	2,744.3

REDUCING OUR FORCES IN KOREA

Senator INOUYE. Thank you, sir.

It is obvious that the Air Force component of the DOD budget will be generating most of the debate heat as we consider this budget—the B-2, the B-1B, the small ICBM, the mobile ICBM, MX, Senator Bumpers' contention that we should be looking into reducing our forces in Korea, the mix of strategic weapon systems. So, I would want once again to reiterate my invitation that you study the testimony you have presented to us and, if you wish, provide any addendum or supplemental testimony, charts, et cetera, because this will be the record that we will study as we consider and make our decisions.

Yours is the big one.

Dr. RICE. Thank you, Mr. Chairman. We will take you up on that offer and that opportunity.

SUBMITTED QUESTIONS

Senator **Inouye**. With that, I thank you, Mr. Secretary, on your first visit with us, and, General Welch, for your testimony and responses to our questions.

We will submit the balance of the questions to you for your response.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

IR MAVERICK

QUESTION: How much did it cost the Air Force to establish the second source for the IIR Maverick?

ANSWER: The Air Force invested $70 million to develop the Raytheon Corporation as a qualified second source for producing the IIR Maverick missile.

QUESTION: Does the Navy fully concur with the Air Force's plan to choose a single production source in fiscal 1990?

ANSWER: The Navy participated fully in our programmatic decision process which led to our strategy to downselect to a single source. They agree that downselection is the most cost effective course at this time.

QUESTION: General Welch, did the Air Force nominate IIR Maverick as a multiyear procurement (MYP) program for fiscal 1990-1992? Multiyear programs must achieve 12 percent or more in savings over annual contracts to gain Congressional approval.

ANSWER: Yes, the Air Force submitted IIR Maverick as a MYP for FYs 90-92. By using a MYP contract, we expect Maverick to achieve at least 12 percent savings over annual procurement practices. These savings accrue from several sources: 7 percent from economic order quantity purchases, 2 percent from manufacturing efficiency increases, and 3 percent from inflation savings.

QUESTION: General Welch, does the Air Force plan to retain some degree of flexibility within the multiyear contracting process so that it might reconsider its decision about Maverick quantities, or production sources, if circumstances and assumptions change after the single source decision is made?

ANSWER: Yes, we will retain priced options to the multiyear contract for additional missile production in FY 91 and FY 92. Also, the multiyear program losing contractor can still compete for possible option quantities. Its production line would be operating since it would still be producing missiles under the FY 89 Maverick contract.

MX/RAIL GARRISON-SMALL ICBM PROGRAMS

QUESTION: General Welch, last year, the Chairman of the Joint Chiefs of Staff testified that the Joint Chiefs had concluded that the additional cost of the Small ICBM as compared with the MX/Rail Garrison, would require an unacceptable diversion of funds from other critical strategic and conventional military programs. You have testified in a similar vein. What are the combined costs of the two ICBM programs during the next five years? Provide a breakdown of all acquisition and Operations and Support costs for each fiscal year in FY 90-94 for the MX/RG and Small ICBM programs.

ANSWER: A breakdown of all acquisition and O&S costs is provided for each fiscal year in FY 90-94 Peacekeeper Rail Garrison and Small ICBM programs. (The FY 92-94 figures represent the Secretary of Defense Small ICBM proposal and do not represent programmed budget numbers.)

($, Million)

	FY 90	FY 91	FY 92	FY 93	FY 94
ICBM Modernization Total	2000.0	2963.0	2736.0	2192.0	1636.0
PKRG					
Acq	1900.0	2763.0	2170.0	1474.0	695.0
O&S	0.0	0.0	28.0	144.0	206.0
Small ICBM					
Acq	100.0	200.0	538.0	574.0	735.0
O&S	0.0	0.0	0.0	0.0	0.0

QUESTION: General Welch, in considering budget constraints, further reductions, or program alterations in fiscal 1990, how would you rank your priorities among the following strategic programs: MX/Rail Garrison, Small ICBM, B-2 Bomber, and fixing the B-1B bomber's electronic countermeasure systems?

ANSWER: The President's revised budget accurately reflects our careful and thorough deliberations in establishing priorities. These programs are vital in enhancing strategic capability. The Peacekeeper Rail Garrison allows the US to deploy a mobile, survivable, and highly accurate land-based MIRVed missile system in a relatively short period of time. The Small ICBM will augment the Peacekeeper Rail Garrison system and is better suited to hold at risk individual targets widely separated in time and/or geography in the post-attack environment. Both missile programs remove the Soviet's unilateral mobile missile advantage, particularly in terms of arms control leverage. The B-2 bomber will provide a quantum leap in manned penetrator capability that will last well into the 21st century. In the meantime, the B-1B will be the Air Force's primary manned penetrator until the B-2 is fully operational. We need to correct deficiencies in the ECM system to counter the threats the B-1B will face in the 1990s and beyond. These four programs have been time phased to provide maximum US flexibility and strategic capability with minimum impact on the budget.

QUESTION: General Welch, what higher priority strategic and conventional weapons programs would be threatened if supporters added funds to the Small ICBM in fiscal 1990?

ANSWER: The Air Force cannot speculate on where the Congress would cut other programs to add funds to the Small ICBM. The Small ICBM does not require added 1990 funding for a well paced program.

NATO ARMS CONTROL IMPACTS ON AIRCRAFT AND MISSILES

QUESTION: NATO's latest arms control proposal, drafted by President Bush, proposes eliminating 800 tactical combat aircraft and 350 combat helicopters by 1993. The equipment either would be destroyed or withdrawn from Central Europe. How many Air Force aircraft would be affected by this proposal?

ANSWER: The President's proposal expands the current proposal tabled in Vienna. It includes reductions by each side to equal ceilings at a level 15 percent below current Alliance holdings of helicopters and of all land-based combat aircraft in the Atlantic-to-the-Urals zone (ATTU). All the withdrawn equipment is to be destroyed. At this time, however, there is disagreement between the Warsaw Pact and NATO on the definition of combat aircraft. Once the definition and a method for achieving the Alliance reductions is agreed upon, the US portion may be determined.

QUESTION: Is any funding requested for these aircraft in the fiscal 1990 budget?

ANSWER: Normal operations and maintenance funding has been requested in the FY 90 budget. It is unlikely that the negotiation would produce change in the 1990 or 1991 force.

QUESTION: NATO's latest arms control proposal, drafted by President Bush, proposes eliminating 800 tactical combat aircraft and 350 combat helicopters by 1993. Would these aircraft be destroyed or withdrawn to the United States?

ANSWER: In accordance with the latest NATO Heads of State and Governments statement of 30 May 89, all withdrawn equipment (including aircraft and helicopters as well as tanks, armored troop carriers, and artillery) would be destroyed.

QUESTION: How many Air Force installations in Europe would lose aircraft under this proposal?

ANSWER: Since the definition of combat aircraft is not yet agreed between NATO and the Warsaw Pact, and an Alliance approach to achieving the 15 percent reduction has not yet been agreed upon; the number of Air Force installations in Europe that would lose aircraft cannot be determined at this time.

QUESTION: How many of these installations have military construction projects in the fiscal year 1990 budget?

ANSWER: The location of units affected by the proposed arms reduction in Europe can not be determined at this time. Therefore it is not possible to state which installations having MILCON projects in the FY 90 budget would be affected.

QUESTION: General Welch, doesn't this arms control plan challenge the requirement to build the new base in Italy to receive the F-16s moved from Torrejon Air Base, Spain?

ANSWER: The Secretary of Defense has publicly stated, "The 401st TFW is absolutely vital to the defense of the Southern Flank and that the unit should be deployed in Italy regardless of other considerations." He further stated, "It would not be our intention to include the 401st, or any portion of it, as part of our potential contribution to conventional force reductions."

QUESTION: Does the US intend to discuss with its NATO allies the suspension of construction of this base and reallocating the contributions that allies would have made toward building the new base toward other needed NATO military construction projects?

ANSWER: The Alliance remains committed to the 401st TFW move to Crotone. There are no current plans to suspend construction.

NATO ARMS CONTROL IMPACTS ON ACFT AND MISSILE PROCUREMENT

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ANSWER: The Alliance remains committed to the 401st TFW move to Crotone. There are no current plans to suspend construction.

B-1B ELECTRONIC COUNTERMEASURES AND OTHER ISSUES

QUESTION: Why does the Air Force propose to implement such a costly program to fix the B-1B's electronic countermeasures systems, and to install other improvements, if the B-2 will assume the primary penetrating bomber missions once it is deployed?

ANSWER: The B-2 is being developed to ensure a manned penetrating capability well into the 21st century. The B-2, taking advantage of technologies unavailable when the B-1B was designed, will negate much of the Soviet's ongoing, heavy investment in surface-to-air missiles and advancements in look-down/shoot-down interceptors. [Deleted]. Funds are requested separately, beginning in FY 90, for the RWR.

B-1B ELECTRONIC COUNTERMEASURES AND OTHER ISSUES #1

QUESTION: Could the US rely on cruise missiles carried by the B-1B and the B-52H to attack targets not covered by the B-52 and, thus, avoid paying for the expensive ECM fixes and other B-1B upgrades?

ANSWER: No. Cruise missiles are effective against certain classes of targets. However, their overall utility against the wider range of targets covered by penetrating bombers is limited by warhead size, lack of aim point adjustment and inflexibility. Nor is it suitable for much of the cross targeting required for high confidence planning. The manned penetrating bomber can hold a much broader target set at risk, and is the only Triad asset that can provide efficient cross targeting in the damage assessment/strike mission.

ECM fixes and associated integration of other programmed systems will extend the B-1Bs penetration capabilities for years to come. Upgrades will be required to maintain the aircraft's viability as the prime penetrator until the B-2 enters the inventory in strength. Even without START, allowing the penetrating bomber force to atrophy would make it practical for the Soviets to concentrate air defenses on cruise missile carriers thereby reducing their effectiveness.

An additional factor that must be considered in a discussion of cruise missiles on the B-1B is the potential impact of a strategic arms reduction agreement. Current negotiating positions heavily favor the pure penetrator while overall cruise missile carriage capability will be restricted. Missile carriage capability allotted to the B-1B force would come at the expense of the carriage capability allotted to the B-52H force, thereby causing a significant reduction in target coverage. A strong penetrating bomber force is central to our current START negotiating position.

B-1B ELECTRONIC COUNTERMEASURES #2

QUESTION: The contractor for the B-1B electronic countermeasures (ECM) system has failed to perform as required. Why should Congress believe that the contractor will now be able to produce the proposed fixes to the ECM system on schedule and within the projected costs?

ANSWER: When the magnitude of the ECM performance shortfall was revealed during flight testing in the spring/early summer of 1988, an independent Air Force team (Air Force Electronic Combat Office - AFECO) was chartered with evaluating all available recovery options. AFECO led a multi-command team to define and assess B-1B defensive systems options. From an initial field of 10 to 12 possible alternatives the six most promising options were selected for a detailed assessment. Based upon this analysis, the Air Force, with the concurrence of the Strategic Systems Committee of the Defense Acquisition Board, is implementing the following plan for addressing the B-1B's ECM shortfalls:

First, establish an ALQ-161A "core" program with EATON Corporation. [Deleted]. The Air Force has sufficient budget authority within existing

B-1B appropriations and expired Air Force budget accounts to fund these correction of deficiency efforts. The cost of the "core" effort is $725 million.

Second, plan to install a stand-alone radar warning receiver (RWR) to augment the "core" ALQ-161 program described above. The RWR will address the situational awareness requirement not achievable within the ALQ-161 "core" program. The FY 90 budget submission requests a total of $116 million in FY 90/91 for the initial integration of the Air Force common RWR (ALR-56M) into the B-1B. The total RWR program estimate is $489 million.

All practical suggestions from EATON have been and will continue to be thoroughly evaluated. However, it is the DOD's sense that a parallel development effort for integrating a common Air Force RWR into EATON's "core" ALQ-161A is the most prudent, best risk approach to providing the B-1B with needed operational capabilities. The combination of the "core" ALQ-161A program and the RWR also establishes the foundation for future growth of the B-1B's defensive avionics.

B-1B ECM #3

QUESTION: What are the principal deficiencies with the B-1B's electronic countermeasures system and how does the Air Force intend to correct and fund each problem?

ANSWER: During the summer and early fall of 1988, the Air Force conducted an extensive evaluation of options to address the performance shortfalls in the B-1B's ALQ-161A ECM system. Although the 1988 flight tests confirmed the most significant ECM techniques work, the tests also revealed a design deficiency in the system's receiver/processor that precludes achieving the system's full performance specification without further modifications. The most significant performance deficiencies are the system's inability to provide situational awareness (crew warning) for older threats, lack of an operational Central Integrated Test System (CITS) maintenance diagnostic function, and lack of a common fleetwide ECM configuration.

The Air Force has extensively reviewed all available options to remedy this situation to include proposals by the contractor as well as using off-the-shelf hardware available from other sources. The following plan is the most prudent risk approach for achieving our objectives. First, establish an ALQ-161A "core" program with EATON Corporation. This program provides a common fleetwide configuration, completes the on-board maintenance diagnostic system, completes the logistics support efforts, fields the tail warning system, and improves the reliability of the receive and jam functions [deleted]. Total costs of the "core" effort are $725M sourced from (199M) active and expired/lapsed ($526M) appropriations.

The second element of the plan addresses the situational awareness shortfall by installing a stand-alone radar warning receiver (RWR) to augment the "core" program. The RWR will address the situational awareness requirement not achievable within the "core" ALQ-161A program.

The FY 90 budget submission requests a total of $116M in FY 90/91 for initial integration of the Air Force common RWR (ALR-56M) into the B-1B. The total RWR program estimate is $489M.

We believe that the parallel development effort for integrating the Air Force common RWR into the B-1B with the EATON "core" ALQ-161A is the most prudent, best risk approach to providing the B-1B with needed operational capabilities. The combination of the "core" ALQ-161A program and the RWR also establishes the foundation for future growth of the defensive avionics.

B1B ECM #4

QUESTION: Why does the Air Force believe it is appropriate to use expired funds to finance a significant portion of the B-1B ECM remedial program?

ANSWER: Two contracts with the Eaton Corporation, one for full scale development and one for production, are involved with the B-1B ECM system. In each case, the contract was entered into during the period of program fund availability: 2 years for the development contract and 3 years for the production contract. Over the past year, the Air Force extensively evaluated the shortfalls in the ECM system. Based on this evaluation, the Air Force decided to issue modifications to the two Eaton contracts directing certain actions to correct deficiencies in both design and hardware. Both contracts contain a "changes" clause which authorizes the contracting office to "make changes within the general scope of the contract." In addition, both contracts contain numerous special provisions which provide the Air Force with a right to have deficiencies corrected. These special provisions are collectively referred to as "correction of deficiencies (COD)." The modifications cite the changes clause and the COD provisions as authority and are issued as bilateral change orders.

The Air Force contracting officer for the ECM contract determined that the change orders are within the general scope of the original contracts. The Office of the Air Force General Counsel issued an opinion concluding that, since the modifications involved are within the general scope of the original contract and are made pursuant to specific contractual provisions, the funding should be supplied from the same appropriations used to fund the original contract award. The legal theory is that a change order does not give rise to a new liability, but instead only renders fixed and certain the amount of the Government's pre-existing liability to adjust the contract price. Since the modifications involved are based on antecedent liability, then the funds originally used are legally available for the modifications. These funds are now in expired or lapsed status.

B-1B ECM

QUESTION: Why was this particular contracting arrangement selected?

ANSWER: The government contract with EATON/AIL for the ALQ-161A is a fixed price incentive firm (FPIF) contract. This type of contract is commonly used in development and procurement when there are uncertain technical, production, or cost risks associated with those efforts which make the use of a fixed price contract impractical. In these cases, the government agrees to share a portion of the risk and, in turn, receives a lower price.

Under a FPIF contract, the government and contractor expect the efforts to be completed at the target price. If the contract is completed below the target price the contractor receives an increase in profit along the agreed to share line and the government's cost is reduced by its share percentage. Above target, but below ceiling, the government and contractor share the costs along the same share line by increasing the government cost and reducing the contractor's profit. However, the government's liability is bounded by the ceiling price of the contract. Above the ceiling price, the contractor is liable for the additional costs to complete the effort.

QUESTION: What is the Air Force doing differently in modifying existing B-1B contracts or awarding new B-1B contracts to prevent such an arrangement which requires the taxpayers to assume such a disproportionate liability in the future?

ANSWER: The share line on the EATON/AIL contract, 80/20, is a normal share-line for this type of contract. The share line reflects a balance between the risk the government is willing to accept associated with the contract and the cost required to have the contractor assume a greater amount of the risk. On the B-1B, Boeing completed under target and Rockwell and EATON/AIL experienced overruns.

In the case of EATON, the Air Force has instituted additional milestones in the "core" ALQ-161A recovery plan that must be completed prior to EATON receiving progress payments or the program progressing further. These milestones include a critical design review, lab and flight test performance, and a functional and physical configuration audit. These milestones ensure that satisfactory progress is being made and that government and taxpayer interests are protected.

PILOT RETENTION

QUESTION: Why does the Air Force have to offer bonuses to retain pilots when the Marine Corps does not? What is the Marine Corps doing right that the Air Force cannot duplicate?

ANSWER: The Air Force and the Navy must pay bonuses to pilots because we will be short of requirements at the end of FY 89. The Air Force projects to be more than 2500 short in FY 94. Although the Marines Corps is much smaller, it is not projecting similar shortages. The Air Force pilot force is more than five times larger than the Marines; however, the Air Force only trains slightly more than three times the number of pilots. Therefore, the Air Force must average 13.5 years of service from each pilot while the Marines need only average 8.2 years of aviation service. Currently, the Air Force is averaging 11 years of aviation service, well below sustainment need. The Air Force pilot 6- to 11-year cumulative continuation rate (CCR) for FY 89 was 43 percent while the Marine Corps pilot CCR for the same period was 37 percent. Because of higher training rates, the

Marine Corps can sustain its force with a CCR below that needed by the Air Force. The Air Force would have to train an additional 1000 pilots/year to match Marine Corps training rates. Aging training aircraft and the unit readiness standards necessary to protect combat capability do not permit the Air Force to increase pilot training rates to these levels.

QUESTION: I feel certain that Air Force would support an increase in flight pay, but does the Air Force also support an increase in the minimum obligation?

ANSWER: Yes. The Air Force supports an increase in the minimum obligation.

QUESTION: How many of them are in the seven to eleven year group?

ANSWER: As of 1 June 1989, there were 3592 eligible pilots in the seven to eleven year group which 60 percent or 2155 have accepted the bonus.

QUESTION: What percentage of eligible pilots have elected to extend their commitments and accept the pilots' bonus?

ANSWER: As of 1 Jun 89, 68 percent of the eligible pilots have elected to accept the bonus and extend their commitments through their 14th year of officer service.

GUARD AND RESERVE FORCE STRUCTURE

QUESTION: Mr. Secretary, why do you believe the guard and reserve should share in force structure cuts?

ANSWER: The Air Force has been a leader in integrating its reserve components into the total force and has brought the Guard and Reserve to a high state of readiness. The Air Force considers force mix and continental US/overseas ratio an integral part of the total force concept. In order to meet our strategy of forward deployed forces while maintaining the proper force mix and overseas balance, the Air Force must spread reductions across the total force. As a result, the force will be reduced by the equivalent of two active and one reserve tactical fighter wing. The Air Force plans to accomplish the reserve component adjustments through equipage reductions (24 PAA to 18 PAA) at eight selected Guard/Reserve tactical fighter units in conjunction with force modernization. Although unit PAA will decrease, modernization will increase unit combat capability.

QUESTION: Doesn't this approach reduce significant combat power for minimal savings?

ANSWER: We are not reducing the force structure in any unit without also converting the unit to a more modern, more capable weapon system. A perfect example is the conversion of an F-4 unit to the F-16. The unit will gain a significant enhancement in firepower at a reduced cost.

QUESTION: Secretary Rice, do you agree with this observation? If so, how can the Air Force justify cutting aircraft and Pilot positions in the Guard and Reserve?

ANSWER: The question does not go deep enough in addressing this issue. Retention of our pilots is a total force endeavor. The Active, Guard, and Reserve Forces continue to work together to retain as many of our flyers as possible. If the Active Force absorbs all the force structure reductions, both the active/reserve balance and the active Continental US/overseas (60% to 40%) ratio will be reduced below acceptable levels. If the Continental US/overseas ratio decreases, pilots will be required to rotate overseas more frequently, which could in-turn further impact active duty retention. Additionally, a recent study by the Air National Guard projects that before the end of the FYDP, Guard/Reserve pilot requirements will significantly exceed the Air Force prior service inventory of pilots. The study points out that of those separating from the Air Force only 60 percent seek positions with reserve units. As the civilian sector demand continues to increase this percentage may decrease. The key to keeping total force retention high starts with keeping active duty retention as high as possible. Professional pilots have become a national resource.

OVERHEAD COSTS -- SPINNEY STUDY #1

QUESTION: Secretary Rice, in a recent article, Charles Spinney of the Secretary of Defense's systems analysis office writes that the Air Force has not reduced overhead and infrastructure in relation to its declining number of aircraft. Spinney notes that large reductions in aircraft did not generate savings. He concludes that many squadrons are now smaller than they should be and far fewer bases are required for fewer aircraft. As a former RAND analyst, what is your opinion of the Spinney analysis?

ANSWER: Mr. Spinney's article reflects one man's personal opinion and not a DOD position. His analysis seems to rely primarily on the percentage of ramp space currently used as the measure of base capacity. That does not meet my standard of a thorough and proper analysis. The Air Force weighs a multitude of factors in determining base infrastructure and overhead requirements. These include available ramp space, maintenance and support facilities, housing, and physical infrastructure; environmental considerations; training airspace and ground range requirements; current and projected operational mission support requirements; local prevailing weather conditions; force dispersal requirements; and fiscal constraints. The Air Force continually reassesses its force structure and associated support requirements and includes appropriate base or force structure adjustments in the President's Budget. The Base Closure Commission's (BCC) recent review of the Services' base infrastructure used many of the same factors in its methodology. Note that the Air Force cooperated closely with the BCC with the result that several Air Force bases were recommended for closure.

QUESTION: Do you believe infrastructure and overhead have not been reduced in line with force structure?

ANSWER: The infrastructure and overhead have been reduced in line with force structure. In the 1950's the USAF had a total aircraft inventory of over 25,000 aircraft which operated from 172 CONUS and 110 overseas bases. The active duty end strength was approximately 980,000. Today's total active aircraft inventory of about 9,400 aircraft operates 96 CONUS and 44 overseas bases. Active duty end strength is currently about 575,000 people. Further, the Air Force continually reassesses its infrastructure and overhead requirements using such factors as available ramp space, maintenance and support facilities, housing and physical infrastructure; environmental considerations; training airspace and ground range requirements; current and projected operational mission support requirements; local prevailing weather conditions; force dispersal requirements; and fiscal constraints. All appropriate reductions are included in the President's Budget.

OVERHEAD COSTS -- SPINNEY STUDY #2

QUESTION: Why is the reduction in civilian support structure not more proportionate to reductions in military end strength?

ANSWER: Air Force military and civilian end strength changes since 1986 are the net result of specific manpower resource requirements needed to support funded Air Force programs. They are not based on arbitrary proportionate changes reflecting the relative size of the Air Force's military and civilian populations. The 41,000 military end strength reduction is tied to a reduction in the Air Force's combat force structure such as KC-135s, fighter-interceptor and ground-launched cruise missile (GLCM) squadrons; tactical fighter, transport, bomber, aerial refueling and reconnaissance aircraft; helicopters; and Titan II Intercontinental Ballistic Missiles. This combat force structure is heavily dependent on military personnel for manning support. The relatively small civilian end strength reduction resulting from the change in combat force structure has been offset by other actions increasing civilian end strength. These actions include over 3000 military to civilian conversions associated with the recent officer reduction initiative, changes in military essential requirements, and the transfer of missions and civilians to the Air Force from other Services (such as the Joint Military Medical Command with over 1200 civilians).

QUESTION: Why has the Air Force operation and maintenance spending continued to increase in constant dollars by $1 billion since 1988 while three wings have been eliminated?

ANSWER: As a result of the FY 88 Budget Summit Agreement, Air Force O&M was reduced over $1.5 billion, including a Congressionally directed $167 million reduction in the flying hour program. This total reduction resulted in negative real growth of 9 percent from FY 87, causing severe turmoil in civilian personnel management and increasing maintenance and transportation backlogs. The Air Force planned a 2-year recovery from the severely constrained O&M funding in FY 88.

The FY 89 President's Budget (PB) reflected most of the $1 billion in growth. The Air Force made a conscious decision to balance a reduction-in-force structure with funding increases in logistics and readiness areas to support a smaller but fully capable force. Associated force reduction costs were taken programmatically and are reflected in the Justification Book. Flying hours were restored to the FY 87 programmed level of hours per crew per month. Depot maintenance and other logistics support activity funds were restored to support the forces and operating activity levels required to meet mission objectives.

In FY 90, the Air Force originally programmed for continued recovery from the FY 88 reductions with emphasis on the remaining readiness areas. However, because of a constrained DOD topline, the Revised FY 90/91 PB has negligible real growth from FY 89. Force structure, operating tempo, and logistics support were not reduced significantly; therefore, direct readiness was not impacted. Major reductions were made predominantly in the readiness support areas, such as Base Operating Support, Real Property Maintenance Activities, and civilian pay.

In summary, the O&M budget is based on the programmed force structure and operating activity levels needed to support the forces to meet our mission objectives. O&M has been supported within Air Force funds availability through internal trade offs within summit agreement toplines.

C-17 ADVANCED TRANSPORT AIRCRAFT PROGRAM ISSUES #1

The Defense Acquisition Board has required the Air Force to undertake several actions with respect to the C-17 program which indicate the program may be experiencing problems in the area of defensive systems, excessive operating weight, logistics funding shortfalls, and disagreements between the Air Force and the Office of the Secretary of Defense program cost estimates.

QUESTION: What specific actions is the Air Force taking to resolve these cost, performance, technical, and funding problems?

ANSWER: The Air Force has initiated several efforts to avoid cost growth as stated in the Dec 88 Selected Acquisition Report (SAR). This includes total quality management (TQM) efforts, incremental Should Cost, Could Cost, procurement pooling, and others. TQM is an on-going effort to strive for the highest quality at the lowest possible cost. It involves not only an Air Force commitment but is being paralleled by Douglas Aircraft Company (DAC) TQM efforts. The first incremental Should Cost team effort began on 15 Mar 89, with receipt of the FY 90 production Lot III proposal from DAC. This effort will culminate with contract award based on T-1 assembly completion (event-based contract award). The other cost reduction efforts are in work. The most probable cost avoidance is to be determined but in all likelihood will be on the order of $1 billion.

There is no disagreement between the Air Force and OSD on the C-17 cost estimate. During the DAB process, the cost estimate was reviewed in great detail by both the Air Force and OSD. Following this review, adjustments were made to the President's Budget to reflect the latest estimate as outlined in the Dec 88 SAR.

The projected operating weight (OW) is stabilizing. The projected OW in November 1988 was 268,667 pounds, and the current projection (May

1988) is 269,447 pounds. During the past few months, the weight has been in this range with no large changes. The projected OW includes projected weight increases as well as weight savings offsets. The contractor has an active weight reduction program which has identified and incorporated over 20,000 pounds of weight savings changes and continues to incorporate additional weight reductions.

A minor breach of the SAR payload/range parameter has been reported, based on the current projected OW. All aircraft are required to meet performance requirements, and weight is not a specific requirement under the C-17 contract. As the contractor, DAC has the responsibility and capability to design the aircraft to meet performance.

Further weight increases could place the SAR parameter at higher risk. DAC has been requested to identify what they plan to do about this situation and its influence on performance. Weight is only one of many factors which influence aircraft performance. Other factors include thrust and drag, and DAC has the design flexibility to affect performance improvements.

This assessment of performance is based on the specific requirements as defined in the contract specification. These requirements are more conservative than the operational or weapon system requirements. Thus, the actual margins are greater than those reported by DAC against the specification requirements. Actual weapon system performance will be measured during flight test.

The logistics funding shortfalls addressed during the DAB in Dec 88 are with interim contractor support (ICS), war reserve materiel (WRM), and common depot support equipment. These funding areas are not managed by the C-17 program. The C-17 shares these funds with other Air Force programs and weapons systems. Relative to the ICS shortfall, the Air Force has committed to funding the C-17 requirement in the years of execution. This funding effort will protect Military Airlift Command's (MAC) flying hour program supporting training for initial operational capability (IOC) and the contract warranties. Necessary adjustments have been made to the budget. The Air Force is working funding for WRM and projects the requirement for the C-17 will be fully funded by FY 94. The common depot support equipment has also been corrected and is now fully funded.

In respect to defensive systems, the Air Force is currently evaluating government furnished equipment (GFE) items for installation in the C-17. The evaluation includes radar warning receivers, missile warning systems, and countermeasures dispensers capable of increasing aircraft survivability in airlift scenarios. Current evaluations center around overcoming installation problems associated with widebody aircraft and the resultant degraded performance. Equipment components are being evaluated for their specific installation performance against a technical requirements document. Equipment component selection will be based on maximum cost effectiveness per increase in survivability.

The C-17 development and production plans for incorporating defensive systems are based on the Program Management Directive requirement for a fiscally limited 106 aircraft minimum with possible options for up to 210 aircraft. Current estimates indicate a possible authority to proceed date of

Apr 91 for the start of the engineering development effort for installation of defensive systems. Possible change to the production line could be as early as P-105.

C-17 ADVANCED TRANSPORT AIRCRAFT PROGRAM

QUESTION: What will be the additional funds and time required to implement these solutions?

ANSWER: We expect to resolve these issues while staying within our current budget projections. Since the Air Force is currently conducting its 1989 detailed Annual Cost Estimate, this program will be addressed as part of this effort and costed appropriately. Adjustments to the budget will then be made as part of the normal Planning, Programming, Budgeting System (PPBS) process. Furthermore, our fixed-priced incentive contract and warranty program limits the government liability in correcting any performance discrepancies.

Currently we see no adjustment to our schedule except for a 4-month delay in first flight. Delivery of the first aircraft to Military Airlift Command (October 1991) and initial operational capability (September 1992) remain unchanged.

C-17 ADVANCED TRANSPORT AIRCRAFT PROGRAM ISSUES

QUESTION: The C-17 development program has suffered technical problems and the flight test program has been delayed. Development of the aircraft mission computer and electronic flight control system have proved especially difficult.

What is the status of the C-17 flight test program and what are the causes for any delays?

ANSWER: Problems associated with the development of the mission computer and electronic flight control system software have affected the overall C-17 avionics integration effort. This has resulted in a delay in the first flight of T-1 (test aircraft) by 4 months.

We currently anticipate a December 1990 first flight and are working to that date. October 1991 delivery to Charleston Air Force Base, South Carolina, September 1992 initial operational capability (IOC), and November 1992 operational readiness evaluation (ORE) are achievable following a December 1990 first flight.

C-17 ADVANCED TRANSPORT AIRCRAFT PROGRAM ISSUES #2

QUESTION: How is the Air Force proposing to solve these problems and at what cost?

ANSWER: The problems associated with the mission computer and electronic flight control system (EFCS) have affected the overall avionics development effort. We have had independent teams review the mission computer development schedules and make recommendations. Douglas Aircraft Company (DAC) and Delco have replanned the effort, continuing the technical development while working the contractual issues separately. The mission computer software critical design review was completed on 14 April 1989. DAC and Delco are working an integrated Delco development and DAC integration schedule incorporating the delays in the software needed to support the first flight of the C-17 and the flight test program. Delco has also advised DAC and the program office that supplier problems will delay delivery of flight development units for integration testing. These delays should not affect delivery of the first final configuration C-17 (P-5) to Military Airlift Command. With regard to EFCS, as of June 16, 1989, McDonnell Douglas is proceeding with parallel development contracts with Honeywell and General Electric and will make a decision on how to minimize delays.

Since our fixed-priced incentive contract and warranty program limits the government liability, resolution of these issues is not currently expected to exceed budget.

QUESTION: What problems have occurred in developing the aircraft mission computer and electronic flight control system?

ANSWER: Both systems have experienced software development delays which resulted from subcontractor underestimation of the software effort. The Douglas Aircraft Company further compounded the mission computer problem by not defining the software requirements and baselining them through documentation with the subcontractor.

QUESTION: Has the Air Force identified solutions to these problems, and what will be the impacts on C-17 program costs and schedule?

ANSWER: The problems associated with the mission computer and electronic flight control system (EFCS) have affected the overall avionics development effort. We have had independent teams review the mission computer development schedules and make recommendations. Douglas Aircraft Company (DAC) and Delco have restructured the effort and are committed to continue the technical development, while working the contractual issues separately. The mission computer software critical design review was completed on April 14, 1989. DAC and Delco are working an integrated Delco development and DAC integration schedule needed to support the first flight of the C-17 and the flight test program. Delco has also advised DAC and the program office that they are having supplier problems that will slip delivery of flight development units for integration testing. We anticipate that these development problems should not affect P-5, which is the final configuration aircraft and is the first C-17 to be delivered to Military Airlift Command. With regard to EFCS, as of June 16, 1989, McDonnell Douglas is proceeding with parallel development subcontracts with Honeywell and General Electric and will make a decision on whom to continue with. However, the August 1990 first flight will slip to December 1990.

Resolution of these issues is not expected to exceed our current budget. The Air Force is currently conducting a 1989 detailed annual cost estimate. The challenges which currently confront the program will be addressed as part of this effort and costed appropriately. Adjustments to the budget will then be made as part of the normal process. Furthermore, our fixed-priced incentive contract and warranty program limits the government liability in resolving these issues.

NATIONAL AEROSPACE PLANE (NASP) CANCELLATION

QUESTION: Secretary Rice, the Pentagon has decided to end its participation in the National Aerospace Plane (NASP) program, despite the strong support of the aerospace industry and the support of those who emphasize its civilian space applications.

What were the military-effectiveness and cost-effectiveness reasons for this decision?

ANSWER: The Secretary of Defense made the decision to end DoD participation in the National Aerospace Plane (NASP) program on affordability grounds. The military-effectiveness or cost-effectiveness of future military vehicles derived from NASP technology were not major factors in this decision. NASP should be thought of as a technology development effort, not a systems development program leading directly to operational capability. If the advanced technology phase were successfully completed, the next step would be to build a classic X-vehicle -- a research plane analogous to the X-15. These technologies are important to the future of the Air Force and I'm hopeful we can find a way to pursue them on a more prudent and realistic basis than the NASP program cancelled by the Secretary of Defense.

QUESTION: Secretary Rice, DoD is spending about $5 - $6 billion over the next five years to assure its access to space through development and procurement of expendable rocket boosters and additional launch facilities. What is NASP's priority compared with these programs? Are these programs a better alternative to accomplishing military missions?

ANSWER: Expendable launch vehicles will be the primary means of access to space for critical national security missions. On the other hand, NASP is intended to develop and demonstrate technology that may someday make airplane-like access to space possible. The continuing development and procurement of expendable rocket boosters is and may remain an essential element of our "assured mission capability" strategy for critical national security space systems.

At projected launch rates, it would be dangerous to rely on any single launch system or small fleet of vehicles to assure US access to space. The loss of the shuttle Challenger and the extended reduction in launch capacity clearly demonstrated the value of a continuing production line for expendable vehicles. Any apparent savings from vehicle reusability must be offset by the cost of maintaining excess capacity to compensate for losses. Until reusable fleets are large or diverse enough and unit costs are low enough to justify continuous production, reusable systems must not be the sole means of access to space.

My personal view is that expendable launch vehicles will be required for many years to come, and that NASP-type systems will not be delivering substantial payloads to orbit until well into the next century. The NASP program must be pursued at a measured and prudent pace to develop the technologies needed to make it possible to consider NASP-like operational systems at some point in the future -- likely about the turn of the century.

NATIONAL AEROSPACE PLANE (NASP) CANCELLATION #3

QUESTION: What other military programs are considered more effective, and higher priority alternatives to NASP to accomplish other missions, such as space reconnaissance?

ANSWER: The Air Force commitment to space boosters, space shuttle operations, and the advanced launch systems program provides the DOD with near- and mid-term access to space for military purposes. The NASP program long-term objective, on the other hand, is to develop the enabling technologies for an entirely new generation of flight vehicles including space launch vehicles capable of single-stage-to-orbit with horizontal takeoff and landing, and aircraft capable of long range hypersonic cruise within the atmosphere.

The NASP is still a worthwhile program. The potential payoff from NASP is considerable but any operational payoff will be realized far downstream. The Air Force proposal was an effort, given current budgetary pressures, to keep the nation's hypersonic technology base warm for better budgetary times. Given those same budgetary pressures and the pressing need for near-term force enhancement and force sustainment programs, the decision was made by SECDEF to terminate the DOD portion of the NASP program. The Secretary's decision was clearly a sound one in light of the NASP program then being pursued. Under the aegis of the National Space Council, the administration is now reviewing options for a less risky, more affordable program to pursue the important areas of technology embodied in the NASP effort.

QUESTION: General Welch, did the Air Force have concerns about the limited utility of NASP for military missions? Did these prompt the Air Force to recommend greatly reduced funding for it in fiscal 1990?

ANSWER: The Air Force did not reduce the National Aero-space Plane (NASP) program based on concerns over the military utility of NASP-derived technology. The Air Force (and other military services) recognizes the enormous utility of NASP technologies which would add revolutionary operational capabilities to a new generation of vehicles. In spite of our conviction that NASP is a worthy program, the issue is budgetary. Given the current severe budgetary pressures combined with the need for near term force enhancement and force sustainment programs, the Air Force found it necessary to reduce the funding in FY 90. Subsequently, the decision was made by the Secretary of Defense to terminate DoD participation in the NASP program.

The National Space Council is conducting a NASP program policy review. This review will result in recommendations to the President on the appropriate NASP national policy and the measures necessary to implement that policy.H1

NATIONAL AEROSPACE PLANE (NASP) CANCELLATION #5

QUESTION: The NASP program faces major technological challenges to develop a space plane which can launch itself into orbit from a conventional runway.

What does the Air Force think are the program's continuing major technological risks? Would it characterize those risks as "high, medium or low"?

ANSWER: There are five critical technologies central to the successful development of NASP. These are:

- air-breathing propulsion
- materials and structures
- advanced aerodynamics
- fuel system performance
- advanced avionics

Concentrated technology development activities are ongoing in each of these areas. Our assessment is that while significant progress is being made in all of these areas, it would be premature to commit to building and testing a flight vehicle at this time. The overall risk assessment (considering all five areas above), while considerably reduced from the time of program initiation, remains in the medium to high range.

COST EFFECTIVENESS ISSUE #1

QUESTION: The Air Force used a list of 22 selection criteria, each with a "weighted value," to help make the MX/Rail Garrison decisions. The costs to deploy MX/Rail Garrison among all the candidate bases was calculated and listed. The Strategic Air Command also developed a rank-ordered basing list. What were the most important basing criteria used by the Air Force?

ANSWER: A siting analysis process was developed by the Air Force for the intercontinental ballistic missile (ICBM) modernization program. It provides a methodology for identifying candidate installations/areas and evaluating the merits of each. Through this process, candidate installations were evaluated for achievement of five goals: maximize system effectiveness, maximize system operability, maximize system practicability, minimize public impacts, and minimize environmental impacts. In addition, operational requirements and recommendations of the operational command are factored into the decision-making process.

QUESTION: What is the relationship of each to determining the cost-effectiveness and military-effectiveness of deploying MX/Rail Garrison at any particular base: For the record, please provide these three lists.

ANSWER: Cost effectiveness was considered in system practicability, one of the five overall goals in the decision process.

MX/RAIL GARRISON-SMALL ICBM PROGRAMS: COST/EFFECTIVENESS

QUESTION: The Defense Department is requesting a $100 million reprogramming for the Small ICBM program from MX/Rail Garrison funds in fiscal 1989.

Can you assure this Subcommittee that the June 1992, Initial Operational Capability for the MX/Rail Garrison system could still be maintained after a $100 million transfer to the Small ICBM?

ANSWER: Yes, the Rail Garrison program is structured to spend only $500 million this year and can transfer the $100 million (of the original $600 million) to the Small ICBM program without a delay in Initial Operational Capability.

The first flight test of the Small ICBM ended in the missile going out of control and being destroyed.

QUESTION: What caused the test problems?

ANSWER: The FTM-1 Mishap team has focused on the Stage II nozzle exit cone but has stated that the root cause of the anomaly may be difficult to identify. The Ballistic Systems Division's (BSD) engineering analysis team, aided by the Air Force Systems Command independent review team, is continuing the investigation and will propose corrective action, if necessary. The detailed engineering analysis is expected to take several months.

QUESTION: What will be the cost and schedule impacts on the program from any effort required to fix these deficiencies?

ANSWER: Program cost and schedule impacts, to include FTM-2 test, are unknown pending the completion of FTM-1 engineering analysis.

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES

QUESTION: General Welch, you have said the B-2's cost per target covered, compared with other strategic weapons sytems, is very good. Secretary Rice repeats this claim in his prepared statement. Does this cost per target covered take into account attrition of bombers?

ANSWER: No. Cost per target covered is computed by spreading total program cost over the total number of targets the system can cover. This figure depicts total system capability in terms of deterrent contribution, i.e. the total number of Soviet targets the Soviet planner must assume to be at risk.

QUESTION: On this basis, how does the B-2 compare with the MX/Rail Garrison, the Small ICBM, the B-1B bomber, and the TRIDENT II missile and submarine?

ANSWER: The following table shows how the B-2 cost per weapon compares to other strategic systems.

[Deleted].

QUESTION: Are the weapons they carry included in your calculations? Please submit this analysis and all supporting information for the record.

ANSWER: Yes. Missile warheads are counted at ten for Peacekeeper and one for the Small ICBM*. Bomber warhead figures are based on a nominal operational loading of [deleted] for the B-1B and [deleted] for the B-2.

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES #2

QUESTION: What are the major reasons for the cost differences, and how much more do you expect the taxpayers really will have to pay for this program?

ANSWER: The differences between the DOD and Air Force cost estimates resulted from different assumptions about production efficiencies and cost avoidances available under existing fixed price option subcontracts. Final costs depend on program funding stability and the resulting ability of program managers to implement cost reduction initiatives.

QUESTION: What are the major different costs estimates, and how do they compare with the $68.1 billion program cost and the $305 million unit flyaway cost announced last December?

ANSWER: The previous DOD and Air Force cost estimates used different estimating assumptions, but both exceeded last December's $68.1 billion (TY $) estimate. Differences between the DOD and Air Force cost estimates have been resolved, and the current total program estimate is $70.2 billion. This results in a $315 million unit flyaway cost (TY $).

QUESTION: Secretary Rice, Secretary Cheney recently was reported to be more positive about continuing the B-2 program. Also, the Defense Acquisition Board met last week to consider the B-2. What technical and cost issues were addressed by the Defense Acquisition Board, and what did it decide about the B-2's cost effectiveness and military effectiveness?

ANSWER: [Deleted].

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES #4

QUESTION: Secretary Rice, at what program cost and unit flyaway cost does the B-2 program become unaffordable to the Air Force?

ANSWER: Much has been made of the sticker shock effect of the B-2 total program cost because it is easily measured and some view it as too high. Unfortunately, this discussion of cost has not been properly offset with an understanding of the B-2's value, which is also high, but not so easily measured. The value of the B-2 is measured in terms of its contribution to deterrence--contributions which cannot be provided by any other current system for the long term and which cannot be quantified as "affordable" or "unaffordable".

When effectiveness is considered, the cost of the B-2 is very competitive with the other modern strategic nuclear systems. A simplistic, but valid, acquisition cost per warhead comparison reflects that the B-2 is about the same as the B-1 and just over half of the cost per warhead of the Small ICBM. Further, in 1989 dollars, average unit flyaway cost of the B-2 is only 20 percent more, per aircraft, than its predecessor the B-1. To put that in perspective, the B-1 cost almost 400 percent more than its predecessor, the B-52, due mainly to the fact that thirty years elapsed between production starts of the two aircraft.

The US needs the B-2 because its nuclear and conventional combat capability will provide a powerful addition to deterrence well into the 21st century. Considering these contributions to deterrence, and given that approximately one third of the total program cost is already invested, it is apparent the B-2 is an affordable, "high value" system well worth the remaining investment to insure the future security of the United States.

QUESTION: If that point is reached, will the Air Force consider killing the program or buying some operationally-useful number of aircraft less than the 132 aircraft in the current position?

ANSWER: The question which has to be answered is "How much is deterrence worth"? The Air Force and DOD remain steadfast in their belief that the B-2 is affordable and that the proposed fleet of 132 aircraft is necessary to meet national security objectives.

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES #5

QUESTION: What would be cost and military implication of further rephasing of the B-2 program?

ANSWER: Further rephasing of the B-2 program would increase total program and unit costs, and delay fielding the required operational capability the B-2 provides. The amount of cost increase and schedule slippage would depend on the severity of the rephasing. Depending on what production assumptions are factored in, total program cost could increase between $1.5 billion and $4.2 billion as a result of procurement reductions proposed for FY 90. Significant reductions beyond FY 90 would result in more severe cost growth.

Reductions in procurement funding will reduce the number of aircraft procured in the near term. If the total buy of 132 aircraft remains constant, these aircraft would then be procured in later years at prices that reflect the inflation and significant additional costs associated with extending the production schedule. Some delay in fielding the operational capability would also occur due to the resulting slowed production activity.

Reductions in development funding would have more severe program impacts. One of the fundamentals of the current program architecture is controlled concurrency that properly balances cost and risk. Slowed development would either increase concurrency, which entails increased risk, or significantly impact production and testing. The impacts of development cuts on the production program could be severe, causing much higher cost penalties and major scheduling delays.

The operational impact of any program delay would be the increased risk associated with maintaining deterrence with older, less capable systems for longer than currently planned. The B-52 force is aging. The last B-52 was produced 28 years ago and major portions of the force will be phased out of the nuclear mission over the next decade. Delays in the B-2 would probably cause rephased B-52 force planning, increasing associated risk. Any significant change to the expected size or activation schedule of the B-2 force would also impact the strategic balance. A robust B-2 force is fundamental to the current US START negotiating position.

QUESTION: Would the Air Force oppose further changes in the B-2 program funding?

ANSWER: B-2 production profile reductions, beyond those already contained in the FY 90/91 President's Budget, will cause major program disruptions and are opposed by the Air Force.

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES #6

QUESTION: Secretary Rice, what is the Air Force's assessment of the quality control of the B-2 bomber manufacturer, especially in view of former Under Secretary of Defense Costello's comments about inferior manufacturing quality by the company?

ANSWER: Quality control in the B-2 program is a high priority for both the Air Force and the contractor. Northrop and its major subcontractors have placed increased emphasis on quality by establishing Total Quality Management programs. These programs have had varying degrees of success. The Air Force will continue to evaluate quality control as part of the production decision process. Secretary Cheney, Deputy Secretary Atwood, and I visited the Northrop design plant and the final assembly facility at Palmdale recently; we were all impressed with the quality of workmanship.

B-2 ADVANCED TECH BOMBER COST AND PROGRAM ISSUES #7

QUESTION: What other management changes have the Air Force and B-2 manufacturer implemented in the last year to improve the B-2 program?

ANSWER: The Air Force and Northrop have worked to improve the contractor's Cost/Schedule Control System. This management system is needed to project program cost and schedule trends more accurately. The approval review is scheduled for August. Northrop also hired an outside consultant to develop and recommend the management and organizational changes needed to transition effectively from development to production. Northrop incorporated the recommendation and is beginning to see some positive results.

OVER THE HORIZON--BACKSCATTER (OTH-B) RADAR

QUESTION: The Air Force's plan as reflected in the FY 1990 budget backup material, was to award a contract in fiscal year 1989 for the first of two Alaskan system sectors. What caused the delay of this award until FY 1990?

ANSWER: The contract award has been delayed until October 1989 for three reasons: First, since only one contractor chose to bid on the Alaska Radar System (ARS), our acquisition strategy had to be adjusted from competitive to sole-source. This is the same situation that caused the delay in award of the West Coast Radar System contract to FY 87. Second, land negotiations with three separate native groups in Alaska were more difficult and took longer than expected, delaying release of the Request for Proposal until March 1989. Finally, revised performance estimates required specification adjustments.

QUESTION: What is the revised acquisition strategy?

ANSWER: The contract will be awarded sole-source to General Electric, the same company that built the East and West Coast Radar Systems. Contract award will be for both sectors.

QUESTION: Why have your plans changed?

ANSWER: Our original intention was to compete the Alaska Radar System, however, only General Electric showed an intent to bid on this system. The lack of competition required us to prepare for a sole-source procurement.

QUESTION: Backup material for the FY 1989 ARS showed contract award for the first Alaskan sector in March 1989 with delivery July 1991. FY 90 budget backup material shows contract award for the same item planned for May 1989, with delivery April 1992, an increase in manufacturing time of 7 months. What caused the lengthening of the production time?

ANSWER: The production time, or manufacturing time, has not increased. What has increased is our estimate of construction time. This increase results from a better understanding, gained through the geotechnical surveys, of construction requirements due to permafrost present at both the transmitter and receiver sites.

QUESTION: What constitutes delivery?

ANSWER: Delivery of OTH-B sectors occurs when the Air Force accepts the system from the contractor, signified by signing the DD Form 250.

QUESTION: What is the current projected contract award date for the first sector; what is its delivery date?

ANSWER: Contract award is projected in October 1989, with delivery in October 1993, following Functional and Physical Configuration Audits (FCA/PCA) and Qualification Test and Evaluation (QT&E)

QUESTION: What is the current projected contract award date for the second Alaskan sector and its delivery date?

ANSWER: Award of the second sector contract will be coincident with the first sector. Delivery date for the second sector will occur in March 1994, again following FCA/PCA and QT&E. Delivery of the second sector will lag the first by 6 months because of sequential manufacturing of some elements, sequential construction of critical structures (antenna and building foundations) and additional integration tasks.

QUESTION: What is the status of integrating the East Coast sectors?

ANSWER: The East Coast Radar System (ECRS) is fully integrated. Integrated operation was successfully demonstrated in November 1988, and all three sectors have been operating in the integrated mode since that time. All software blocks have been delivered and fully integrated.

QUESTION: Has an Operational Test and Evaluation been performed on the integrated system? If not, when will it be performed?

ANSWER: Initial Operational Test and Evaluation of the fully integrated system is scheduled to begin in November 1989. As you know, the ECRS entered Limited Operations in December 1987 with a single operational sector. Sectors 2 and 3 were completed, delivered, and integrated in 1988. We have been operating the fully integrated 3-sector system since November 1988 under the Limited Operations concept. Based on the experience gained, we expect no surprises during IOT&E.

QUESTION: Is this program reviewed by the DAB as a major acquisition system, and if so, will certification of operational testing be provided to the Congress by DOT&E as required by law prior to full rate production?

ANSWER: The Over-the-Horizon Backscatter (OTH-B) Radar Program is not a DAB program. Decision authority on this program was delegated to the Air Force in 1981, and the production decision was made in 1982. Periodic program reviews by the Air Force have reaffirmed that production decision.

CARIBBEAN BASIN RADAR NETWORK

QUESTION: What are the tentative sites for the FY 1988, 1989 and 1990 funded radars?

ANSWER: [Deleted].

QUESTION: What is the status of negotiations with the respective host nations?

ANSWER: [Deleted].

QUESTION: Are Military Construction funds required? What is the status of any required MILCON funds?

ANSWER: [Deleted].

CARIBBEAN BASIN RADAR NETWORK #2

QUESTION: The FY 1989 budget material anticipated a Mar 88 award for the FY 1988 contract. The FY 1989 backup material anticipated a February 1989 award. This projected award was subsequently revised to third quarter FY 89. What caused the slip?

ANSWER: This slip was caused by initial delays in securing the host nation agreement (HNA) with the Government of the Dominican Republic and was further exacerbated by extended contract negotiations with the CBRN contractor on site-specific construction costs.

QUESTION: Has the contract been awarded? If not, when will it be awarded?

ANSWER: The Host Nation Agreement with the Government of the Dominican Republic was concluded in August 1988. This was followed by government and contractor site surveys, negotiations of site specific construction costs, finalization of the contract option for the complete site, and award/execution of the option in May 89.

CARIBBEAN BASIN RADAR NETWORK #3

QUESTION: The FY 1989 contract award has been slipped from January 1989 to fourth quarter FY 1989. Why?

ANSWER: The FY 89 budget request supports the procurement of two Caribbean Basin Radar Network (CBRN) systems for Colombia. The host nation agreement (HNA) for these two systems (mainland Colombia and San Andres Island) was in negotiation for nearly 14 months. No site surveys could be conducted without a signed HNA and, without site surveys, the contractor could not prepare proposals covering unique site construction requirements. The HNA was finally concluded in Feb 89 and a government site survey conducted. The CBRN contractor (Westinghouse) completed his site survey of both locations on 1 Jun 89, and has up to 6 weeks to prepare his proposal for unique site construction.

QUESTION: When will each of these two radars deliver?

ANSWER: The contract (option) has not yet been awarded. The contractor proposal for unique site construction will be received by mid-July 1989. The execution of options for both sites is planned for mid-August. Construction should commence in September and first site delivery (Initial Operational Capability) on San Andres Island should occur in June 1990 followed 3 months later by the site on the Colombian mainland.

QUESTION: The FY 1990 award was scheduled for January 1990--has it also slipped?

ANSWER: The FY 90 request covered three CBRN systems currently planned for Honduras, [deleted]. The US concluded a Host Nation Agreement (HNA) with the first of these three (Honduras) in April 1989. This was followed by a government site survey in late May. A contractor site survey is scheduled for early July. Contract option award/execution is scheduled for December 1989 and represents no slip in schedule. We have concluded negotiations with the [deleted] [deleted] site and are awaiting signature. The remaining FY 90 radar system for [deleted] is in HNA negotiation with next scheduled discussions planned for the end of June 1989. Contract award for the [deleted] sites will follow Honduras by 3 to 6 months.

QUESTION: When will each of these three radars deliver?

ANSWER: Current projections are that the Honduras site will be delivered in October 1990. The [deleted] sites should both be delivered prior to April 1991 (depending on actual completion of Host Nation Agreements).

QUESTION: Have any prior year funded radars been delivered?

ANSWER: Yes, the first Caribbean Basin Radar Network (CBRN) site at Semaphore Hill, Panama, was delivered. This site attained Full Operational Capability in April 1988.

QUESTION: The FY 1986 radar was to award Mar 1988, deliver January 1989. Did it deliver on schedule?

ANSWER: The planned FY 86 radar did not deliver on schedule due to the delays caused by extended negotiation of the Host Nation Agreement (HNA) with the Government of Colombia. As a result, the reprogrammed FY 86 funding was used to support other existing CBRN requirements. Those included data connectivity between the CBRN Region Operations Center (ROC) at Howard AFB, PN, and CONUS and automated data connectivity between remoted CBRN radars and the ROC.

QUESTION: This schedule represents manufacturing time of 10 months. Is this still an accurate estimate of manufacturing time?

ANSWER: Ten months represents the contract specified time between award of contract/option and Initial Operational Capability for the site. This is based on the original CBRN site at Semaphore Hill, Panama. This time is subject to increase or decrease depending on site-unique construction requirements developed as a result of individual government/ contractor site surveys.

DEW RADAR STATIONS/NORTH WARNING SYSTEM

QUESTION: What is the status of the short range radar development program?

ANSWER: The full scale development program for the short range radar (SRR) is essentially complete. The only remaining activity is the completion of the maintenance test portions of the Development Test & Evaluation (DT&E).

QUESTION: Have the technical issues been resolved?

ANSWER: All major technical issues have been resolved. Data on minor discrepancies are being collected as they are discovered during Initial Operational Test and Evaluation. Since test rules preclude fixing deficiencies during the test period, they will be evaluated and, if necessary, fixed in production.

QUESTION: When did the SRR complete development test and evaluation?

ANSWER: Development Test and Evaluation (DT&E) is about 95 percent complete. DT&E Performance Testing was completed 6 February 1989. Maintenance Testing remains to be completed, and will be conducted 5 July-22 December. Maintenance Testing consists of a Maintainability Demonstration, System Safety Test, Human Factors Tests, and Reliability Qualification Test. These tests are long duration tests, requiring many hours of radar operation. They were deferred to the July-December schedule so Initial Operational Test and Evaluation (IOT&E) could be conducted during the most stressing time of the year; during spring-summer ice break-up and bird migrations. The system was certified ready for IOT&E by the Program Executive Officer in early February following successful completion of the majority of the DT&E tests.

QUESTION: What is the status of operational test and evaluation?

ANSWER: Initial Operational Test and Evaluation (IOT&E) began 7 March 1989. Effectiveness Testing will be conducted through 30 June 1989, and will consist primarily of flight tests to evaluate radar performance against various types of targets and Electronic Countermeasures (ECM). Very little information is available during the test period; however, we understand that the Effectiveness Testing is going very well. The Suitability Test portion of IOT&E (reliability, maintainability, system safety, human factors, etc.) began 15 May and will run 120 days. It is being conducted in two locations, North Bay, Canada and Barter Island, Alaska, to maximize data collected.

QUESTION: Who is the decision authority for this program?

ANSWER: The Commander of Air Force Systems Command's Electronic Systems Division at Hanscom AFB, MA, is the program executive officer, and as such, has the decision authority with concurrence of the user and the Air Force Acquisition Executive.

QUESTION: When is Milestone III decision scheduled?

ANSWER: The production decision will be made following completion of IOT&E, when test results are available. The decision is currently projected for November 1989.

QUESTION: When will the SRR contract be awarded?

ANSWER: The contract award is now projected for January 1990. This schedule is predicated on the Unisys suspension being lifted in June 1989. Since the SRR development contract is one of those involved in the on-going Department of Justice investigation, there is potential for further delay of the production contract pending resolution of legal issues.

QUESTION: Are there any impediments to contract award with Unisys?

ANSWER: Yes. On March 15, 1989, the Department of the Navy suspended the Shipboard and Ground Systems Division of the Unisys Corporation from doing business with the Government as a result of improper activities. In addition, the SRR development contract is one of those involved in the on-going Department of Justice investigation, and legal issues must be resolved before award of the production contract.

QUESTION: Was this award with one of the divisions suspended as a result of the "Ill Wind" investigation?

ANSWER: Yes. The North Warning System contract was awarded to the Sperry Surveillance and Fire Control Systems Division, now the Unisys Shipboard and Ground Systems Group. This Unisys division was suspended by the Department of the Navy on March 15, 1989.

QUESTION: Has the suspension been resolved?

ANSWER: The suspension has not yet been resolved. The Navy and Unisys are in the process of negotiating a settlement that would result in the suspension being removed.

MILSTAR PROCUREMENT #5

QUESTION: What is the status of the Milstar development program?

ANSWER: The Milstar communication system (space, mission control and service terminal segments) was reviewed by the Defense Acquisition Board (DAB) on 9/10 May 89. The board concluded that the major technical problems had been resolved, and the Air Force is proceeding toward the integration and test phase of the first satellite late this summer. The DAB also authorized low rate initial production (LRIP) for both the Navy and Air Force terminal programs.

QUESTION: What was the result of last month's DAB review?

ANSWER: Please see previous answer.

QUESTION: Are all services procuring the same terminals?

ANSWER: Each service is developing and procuring a terminal which will interoperate on the protocols established in a jointly managed technical interface document. However, each terminal type is designed for use in each service's operational environment. For example, the Air Force terminal has the protocols for National Command Authorities/Commanders-in-Chief internetting, satellite mission control, and attack warning/attack assessment, while the Navy and Army terminals are designed primarily for use in sea and battlefield operations.

QUESTION: With that satellite delivery schedule are the ground terminals synchronized?

ANSWER: The production and installation schedule for Milstar terminals is properly phased to support the FY 90 Amended President's Budget satellite launch schedule. We will field terminals according to the following priority: National Command Authorities, Commanders-in-Chief of Unified and Specified Commands, attack warning/attack assessment, satellite mission control, etc. Fielding these 159 terminals by FY 95 provides connectivity for the highest priority users consistent with satellite constellation buildup.

QUESTION: Is the satellite on this schedule?

ANSWER: Yes, the satellite and terminal are aligned.

SATELLITE CONTROL FACILITIES

QUESTION: General Welch, the amended budget requests an additional $24.0 million in FY 1990 and an additional $50 million in FY 1991 for the satellite control facility, transferring funds from the requested procurement program to the development program. The GAO reports that the Air Force now plans to spend $1.85 billion to make these systems operational. What have you spent on the satellite control facilities so far? How much in procurement, how much in R&D?

ANSWER: The Air Force Satellite Control Network (AFSCN) is operational today supporting over 60 DOD on-orbit satellites. It plans for and supports satellite launches, provides early-orbit satellite checkout and on-orbit operations, and resolves problems for the current on-orbit satellite inventory. The additional $24 million in FY 1990 and the $50 million in FY 1991 continue the modernization of this network. The program modifies and upgrades existing AFSCN tracking, commanding, data processing, and communications systems to provide capabilities needed to meet evolving spacecraft mission requirements. In addition, the program modernizes the 30-year-old command and control system by replacing obsolete equipment to insure reliable support to DOD spacecraft. The GAO estimate of $1.85 billion to modernize the Air Force Satellite Control Network included the Data Systems Modernization (DSM), and the Consolidated Space Operations Center (CSOC) programs, including O&M for the CSOC.

From FY 84 through FY 89, $860 million will have been spent on the

Satellite Control Facility program. Of this amount, $372.3 million was in procurement and $487.7 was in RDT&E.

QUESTION: What is the current estimate of the total program cost?

ANSWER: The Satellite Control Facility Program provides for the continuing modernization of the worldwide Air Force Satellite Control Network (AFSCN). The AFSCN provides launch, early-orbit initialization, on-orbit operations, and problem resolution support to the current on-orbit inventory of over 60 DOD spacecraft. The program modifies and upgrades existing AFSCN tracking, commanding, data processing, and communications systems to provide new satellite control capabilities in response to the continually evolving requirements of the various spacecraft that the AFSCN supports. It also modernizes the 30-year-old network by replacing obsolete systems to insure reliable satellite support to the current on-orbit inventory. The program provides several "one-of-a-kind" changes to AFSCN systems based on specific spacecraft requirements while the AFSCN simultaneously continues to support on-orbit satellite operations. Since this is a continuing modernization program, there is no total program cost as there would be for a traditional acquisition program with a final delivery date.

QUESTION: What caused the cost growth from the original estimate of about $600 million?

ANSWER: In 1987, the GAO reported a 1980 estimate of $600 million to complete the Data Systems Modernization (DSM) and Consolidated Space Operations Center (CSOC) programs. DSM was an element of the Satellite Control Facility modernization program, while CSOC is a separate acquisition program distinct from the Satellite Control Facility. In December 1980, the original contract value for DSM was $195 million. A December 1980 Air Force study estimated $402 million would provide a minimal satellite control capability (CSOC) in Colorado.

In 1987, the GAO estimated that DSM and CSOC would cost $1.85 billion to complete. Of this amount, the GAO estimated DSM costs would be $477 million. The DSM contract, completed in December 1987, provided new satellite control computer hardware and software at the Consolidated Space Test Center at a cost of $458 million. The estimate to complete the CSOC acquisition is $1.05 billion. The GAO also included $300 million of CSOC operations/maintenance costs which are not part of the CSOC acquisition.

The cost growth is largely due to the continual evolution of system requirements over the course of the programs, schedule extensions caused by funding profile limitations, and the complexity of integrating the new systems while simultaneously supporting on-orbit satellite operations. Specifically, DSM system requirements evolved as the number and complexity of satellite contacts increased due to maturing operational concepts and higher satellite launch rates resulting from the space launch recovery. Revised CSOC requirements from the 1980 estimate include reassignment of several satellite programs. A launch/early orbit capability for assigned programs, an Operations Command Center (OCC) providing CSOC connectivity to the National Command Authorities, and a program supporting extensive military crew training were added. In addition, the communications architecture was redefined to create an independent CSOC node with direct connectivity to all remote tracking stations, and support requirements were integrated, including CSOC integration into the existing AFSCN. This was all accomplished without impacting ongoing operations.

QUESTION: What is the status of the development program?

ANSWER: The Satellite Control Facility program provides for the continuing modernization of the Air Force Satellite Control Network (AFSCN). The development program performs two major tasks: a) modifies and upgrades existing AFSCN systems to provide new satellite control capabilities in response to the continually evolving requirements of the various spacecraft that the AFSCN supports; b) modernizes the 30-year-old network by replacing obsolete equipment to insure reliable support to DOD spacecraft. In FY 89, the development, integration, and testing of new AFSCN computer and communication capabilities were crucial in supporting launches of two classified spacecraft, two SDI experiments, and the first two Block II Global Positioning System (GPS) spacecraft without any impact to the operation of over 60 spacecraft now on orbit. The development effort will continue as the AFSCN supports an increased number of launches and on-orbit assets as DOD and NASA recover from the extended launch standdown. Toward this end, we will continue to perform requirements analysis, systems engineering, systems development, integration, and test of new AFSCN capabilities for new spacecraft planned for launch over the next several years. The second major task in the modernization program is the installation of the Automated Remote Tracking Station (ARTS) program. ARTS replaces obsolete equipment at all twelve existing remote tracking stations by 1993 and adds four new stations to support the growing AFSCN satellite workload. Development of the ARTS system is complete with the first three new ARTS stations delivered and operating at Thule, Greenland, Falcon AFB, Colorado, and Oakhanger, United Kingdom. ARTS development will continue in support of site-unique design, installation, and test activities for the remaining stations.

QUESTION: When was the most recent Defense Acquisition Board review?

ANSWER: Since it is not a major development or production program, the Satellite Control Facility Modernization Program has not been reviewed by the Defense Acquisition Board. The program is a continuing modernization program, which modifies Air Force Satellite Control Network (AFSCN) ground systems in response to the continuously evolving requirements of the 60+ spacecraft that the AFSCN routinely supports. Development and procurement funds generally support "one-of-a-kind" modifications to AFSCN tracking, commanding, data processing, and communication systems.

SATELLITE CONTROL FACILITIES #2

QUESTION: Deputy Secretary of Defense Atwood testified before this subcommittee that in his experience, the programs that had the most serious cost and schedule problems were those where development and procurement were overlapped. Why are you requesting $68 million in FY 1990 for procurement of a program that is still in development?

ANSWER: The Satellite Control Facility program provides for the continuing modernization of the worldwide Air Force Satellite Control Network (AFSCN). The AFSCN consists of satellite tracking, commanding, data processing, and communications systems used for planning and controlling operations of the current on-orbit inventory of over 60 DOD spacecraft. The program modifies and upgrades existing AFSCN systems to provide new satellite control capabilities in response to the continually evolving requirements of the various spacecraft that the AFSCN supports, and modernizes the 30-year-old network by replacing obsolete equipment to insure reliable support to DOD spacecraft. In FY 90, $60.1 million in procurement funds will be used for three Automated Remote Tracking Stations (ARTS) upgrades. The ARTS program adds four new stations to the AFSCN and replaces obsolete equipment at all twelve existing AFSCN remote tracking stations by 1993. The remaining $8.3 million in FY 90 procurement provides new AFSCN capabilities to support evolving spacecraft requirements. RDT&E funds provide analysis of new spacecraft program requirements, system development, and integration and test of all hardware/software changes to AFSCN ground systems. The Satellite Control Facility modernization program is not a traditional "development" or "procurement" program. The program provides "one-of-a-kind" changes to AFSCN systems based on specific spacecraft requirements while AFSCN systems simultaneously continue to support on-orbit satellite operations. The decision to use RDT&E funds instead of procurement funds is made after analyzing the specific task or project of the Satellite Control Facility program, not in accordance with a specific program phase.

SATELLITE CONTROL FACILITIES #3

QUESTION: A recent Air Force study concluded that "the capacity at the Consolidated Space Operations Center (CSOC) for satellite operations, training, and support functions is expected to be inadequate when projected future satellite programs are added to existing programs." Does this mean that even after $1.9 billion has been spent on it, the CSOC will be inadequate?

ANSWER: CSOC is becoming the principal node for the Air Force Satellite Control Network. As currently planned, CSOC will adequately provide common-user launch and on-orbit support to all assigned programs, including the Global Positioning System, Defense Support Program, Defense Meteorological Support Program, Defense Satellite Communication System, Fleet Satellite Communication System, and NATO satellites. The addition of new satellite programs will require expansion of satellite operations, training, and support capabilities since CSOC is sized to meet the known, validated requirements.

The cost to complete the CSOC acquisition is $1.05 billion. In 1987, the GAO estimated that CSOC would cost $1.85 billion to complete. This estimate included some costs not part of the CSOC acquisition; specifically, $300 million for CSOC operations/maintenance costs and $477 million to complete the Data Systems Modernization (DSM) program. DSM is a separate and distinct program from CSOC. The DSM contract, completed in December 1987, provided new satellite control computer hardware and software at the Consolidated Space Test Center at a cost of $458 million. To minimize acquisition costs and maintain interoperability between both Centers, CSOC uses copies of the DSM hardware and software for its satellite mission control complexes.

QUESTION: Will you require future upgrades? At what additional cost?

ANSWER: CSOC, as part of the Air Force Satellite Control Network (AFSCN), will evolve in order to maintain responsive support to existing and new space systems. As new satellite support requirements for the AFSCN, including CSOC, are identified, modifications and upgrades will be required to insure compatibility between the space and ground systems. A 1987 Satellite Control Architecture study addressed the "warfighting" needs for satellite control in the year 2015 based on predicted threats and operational needs. It identified an architecture for the study and development of new space systems that will allow effective satellite control in a "warfighting" environment. As each space system is designed, satellite control requirements will be addressed from a capacity and survivability standpoint. The newly installed CSOC systems will serve the primary needs of AFSCN operations for the remainder of this century.

QUESTIONS SUBMITTED BY SENATOR ERNEST F. HOLLINGS

B-2

QUESTION: How do the various flight times of the two aircraft (B-1B and B-2) compare when performing a Soviet mission?

ANSWER: Due to the B-1B's higher speed at low altitude, its planned mission is shorter than the B-2. Exact times are highly dependent on such factors as aircraft basing, route planning, defenses, etc.

TORREJON

QUESTION: What are the costs of the facilities we will abandon at Torrejon?

ANSWER: The current facility investment at Torrejon Air Base is $90.4 million.

QUESTION: What are the total estimated costs for severence pay and other expenses payable to Spanish citizens and to the government when the pull-out occurs at Torrejon?

ANSWER: Our best estimate of accrued liability for Torrejon workers as of 31 Mar 89 was $11.98 million; this includes both appropriated and non-appropriated fund workers. Pay raises for FY 88 and FY 89 have not yet been awarded to Spanish workers. When they eventually are awarded, this will raise the base pay of the workers and, accordingly, raise the amount of their severance pay entitlement. This figure will also increase when calculations are made as to payments for accrued annual leave and for severance pay to compensate contractors.

401ST

QUESTION: What are the estimated costs for Milcon at Crotone -- both the U.S. costs and the infrastructure costs?

ANSWER: The MILCON request is $15.4 million for FY 90, $5.85 million for FY 91, and $8.0 million for FY 92. The total NATO infrastructure cost is estimated at $827.3 million.

QUESTION: What is the status of negotiations for the transfer of the 401st to Italy?

ANSWER: During the 8 Jun 89 U.S.-Italian bilateral discussions, both Secretary of Defense Cheney and Minister of Defense Zanone reaffirmed their respective administration's commitment to relocating the 401st to Crotone. The remaining negotiations involve only the details for implementation, including such issues as boundary and total land requirements, land expropriation, airfield layout, joint civil-military use, and acquisition of an air-to-ground range. We do not expect these issues to be resolved until the Italian government is more certain that the U.S. Congress will fund the U.S. share of the relocation costs.

QUESTION: Have agreements been reached on facilities design and the base structure at Crotone?

ANSWER: The base boundary has been agreed upon in principle between the U.S. and Italy pending final NATO approval. The facility design standards and requirements are currently being developed under an architectural and engineering contract as part of the base master planning effort.

HELLENIKON

QUESTION: What are the costs of the facilities at Hellenikon?

ANSWER: Current facility investment is $14.2 million.

QUESTION: What is the status of negotiations on our facilities in Greece?

ANSWER: Base negotiations with Greece began in Nov 87 and seventeen rounds have been completed. Although significant progress has been made in developing the framework for a new agreement, many specific details relating to US bases remain unresolved. Talks are now in recess until installation of a new government following the 18 Jun 89 Greek national elections.

QUESTION: What are the estimated costs of new facilities to replace Hellenikon?

ANSWER: The estimated costs to relocate all the existing operations at Hellenikon [deleted].

B-2

QUESTION: What are the annual procurement levels (quantities) for the B-2--by fiscal year?

ANSWER: The annual procurement level for the B-2 by fiscal year through the Amended FY 90/91 President's Budget is :

88 & Prior	89	90	91	92	93	94
5	3	3	5	10	21	24

B-2 #1

QUESTION: When will the R&D flight test program be completed for the B-2?

ANSWER: The R&D flight test program will be completed in 1993.

QUESTION: What is the estimated flight time(s) for the B-2 to various targets in the Soviet Union and will the US penetration mission of the Soviet Union require refueling to reach the target(s)?

ANSWER: Flight times to targets in the Soviet Union depend on basing, ingress routes, defenses and other factors. Approximate times are [deleted] which is comparable to [deleted] today. The B-2 will have range [deleted] which means, depending on route planning, refueling may not be required.

B-2 #2

QUESTION: How will the B-2 maintain its stealth capability if refueling is required?

ANSWER: Refueling is not planned within range of Soviet long range defenses where stealth is required.

B-2

QUESTION: Describe the weapons load of both the B-1B and B-2 in a Soviet mission.

ANSWER: A typical Soviet mission would employ the B-1B with about [deleted].

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

ROLES AND MISSIONS OF AIR FORCE FIGHTER/ATTACK AIRCRAFT

QUESTION: Since many of the US Air Force's tactical aircraft are also capable of delivering nuclear weapons, it seems very likely in the current international environment that the force levels and deployments of our tactical fighter/attack planes may soon be subjects of arms control negotiations. What is your current thinking about the types of Air Force planes and overseas bases that will be most involved in such negotiations?

ANSWER: While the general thrust of the President's proposal has been publicly presented for consideration by the Soviets and our Allies, there remains much work to be done in defining terms and formulating negotiating positions that will meet the legitimate needs of all those affected by this significant change in defense posture. A balance must be struck between deterrence, both conventional and nuclear, and our warfighting ability to counter the threat. This threat, which varies by region, will be the subject of future negotiations. As a result, it is likely that the formulation of US proposals will be an iterative process. As a general rule however, the Air Force position would be that initial reductions will be in older or less capable aircraft.

QUESTION: Please provide for the record information on the nuclear-delivery capabilities and base locations of our Air Force tactical aircraft.

ANSWER: While many tactical aircraft have systems that enable them to employ nuclear weapons, only a portion are tasked for this mission. Units that are tasked in operations plans with both conventional and strike missions are the only units that train in the nuclear missions. For example, all F-16s can deliver nuclear weapons, but fighter interceptor squadrons performing strategic air defense with F-16s are not tasked for and do not train for nuclear strike missions.

The following [deleted]. While the beddown of F-15Es in Europe remains to be negotiated, all F-15Es will be nuclear capable.

CLOSE AIR SUPPORT AIRCRAFT

QUESTION: In light of current developments in East-West relations, do you believe we will need close air support aircraft to defend Europe against a Soviet attack of NATO in the next five years?

ANSWER: Yes. We will continue to need aircraft capable of applying decisive firepower to assist forces in contact, as well as neutralizing enemy combat elements that will have a near-term effect on the battle. Our mission is to support the needs of the Joint Force/Theater Commander. As long as Army forces remain in Europe, the Air Force will be in-place to support them. Although East-West relations appear to be improving, no decision has been made concerning conventional forces in NATO. Once a decision is made, the Air Force will conduct a detailed global assessment and tailor our force structure accordingly.

QUESTION: Please identify the weapon systems that you consider the most important deterrents against a Soviet attack on NATO forces in Europe.

ANSWER: Deterrence demands the full range of theater nuclear forces and conventional tactical air support to ground forces. We are seeking a balanced program to modernize dual (nuclear and conventional) capable aircraft with the F-15E, SRAM-T for the F-15E and F-111, and the F-111 Avionics Modernization Program. For air superiority, continued upgrades to the F-15 and building AMRAAM are key programs. For interdiction at all depths, the F-15E and F-16 with enhanced night capability and stand-off weapons are key. For close air support, improvements to A-10s and existing F-16s will provide improved capability until we can select and field a follow-on CAS aircraft.

QUESTION: Based on the best available estimates of the costs of developing and producing a new aircraft with the performance capabilities you consider necessary for close air support, what would it cost to develop and produce an aircraft designed specifically for close support of ground troops?

ANSWER: As tasked by Congress, DoD is currently preparing to conduct an operational test of alternative close air support (CAS) aircraft. Test results will help us determine the optimum follow-on CAS aircraft. Previous aircraft studies accomplished to satisfy Army requirements for both the CAS and battlefield air interdiction missions indicate that development costs alone would be $3 to 5 billion. Procurement costs would depend on the quantity of aircraft purchased.

QUESTION: Do you favor the development of a new aircraft specifically designed for close air support operations in low-intensity conflicts in the third world? Please identify and discuss the advantages and disadvantages of using a version of the F-16, A-7, A-10, and AV-8B for these missions in third-world conflicts (including in your answer Marine Corps data on the AV-8B).

ANSWER: The Air Force does not favor developing a new aircraft designed specifically for close air support (CAS) in low-intensity conflicts (LIC) in the Third World. Low intensity does not necessarily equate to low technology. Army requirements for LIC dictate a highly responsive aircraft capable of delivering precision attacks on a variety of targets. Air Force aircraft capable of performing the CAS and Battlefield Air Interdiction mission on the high intensity battlefield of the 1990s will also be well-suited for the LIC mission. Therefore, it would not be prudent or cost-effective to develop a new aircraft specifically designed for LIC. The Air Force envisions a mix of aircraft capable of worldwide operations in the low to high intensity threat environment. The Air Force has not specifically studied the AV-8B in the LIC environment. This information should be obtained from the Marine Corps.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

B-2 PROGRAM #1

General Welch in your testimony today, you spoke of the cost per target ratio of the B-2 bomber and compared that ratio with those for the B-1 bomber and ICBM's.

QUESTION:

1. Please define the cost per target ratio?

2. Would you please clarify your assertion that the cost per target ratio for the B-2 is approximately half that of ICBM's and roughly equal to that of the B-1 bomber?

3. How did you reach the above conclusions?

ANSWER #1: Cost per target covered is computed by spreading total program cost over the total number of targets the system can cover. This figure depicts total system capability in terms of deterrent contribution, i.e. the total number of Soviet targets the Soviet planner must assume to be at risk.

ANSWER #2: The following table shows how the B-2 cost per weapon compares to other strategic systems.

[Deleted].

ANSWER #3: The cost per target covered varies by strategic system. For the B-1B and B-2, it is the total aircraft inventory (TAI) multiplied by the number of weapons carried per sortie and then divided into program acquisition costs. For the ICBMs, it is the total missiles deployed multiplied by RVs per missile divided into program acquisition costs.

B-2 PROGRAM #2

QUESTION: Please clarify this term (best acquisition management practice).

ANSWER: The term refers to a wide range of management techniques used to reduce risk and assure accomplishment at each stage of systems development before proceeding to later stages. As applied to the B-2 I was referring specifically to the decision to delay the commitment to high rate production, allowing adequate time for flight testing before such a decision. The B-2 program acquisition strategy was changed 2 years ago. This reflects a milestone driven, not calendar driven, program. This means the contractor must demonstrate he can meet documented requirements through aircraft testing before proceeding to the next program phase.

QUESTION: Are these delays reflected in Air Force projections of operational timetables for B-2 deployment?

ANSWER: Yes. B-2 program delays are reflected in Air Force operational timetables.

QUESTION: Within a range, what per cent increase to the cost of the program is a result of these delays?

ANSWER: Since January 1986, the total program cost of the B-2 has increased by 20 percent. This represents growth from $36.6 billion to $43.8 billion (FY81$) due to all factors. The portion attributable to program delays is difficult to quantify. These delays have been caused by technical problems associated with translating low observable design into manufacturing practicalities, fiscal constraints produced by lower budget ceilings, and a major redesign in 1983.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

START

QUESTION: Under the START framework that both sides have agreed to in Geneva, the US will be allowed 4900 Ballistic Missile RVs. What is the minimum number of ICBM RVs that the Air Force would require under a 4900 RV ceiling?

ANSWER: While specific force structure information is premature until a START agreement is reached, I believe a balanced, modernized Triad would require, at a minimum, on the order of [deleted] ICBM RVs.

START #2

QUESTION: In a START environment, would you plan to keep the B-1s as purely penetrating bombers, or would you convert them all to cruise missile carriers as Soviet Air Defenses continue to improve? If they are to remain as penetrators, what will you do to enhance their penetration capability? If they are to be converted to cruise missile carriers, how would you squeeze them into a START 6000/4900 warhead framework, especially in light of your plans for the B-52H?

ANSWER: [Deleted]. The B-1B's design was optimized to perform the low altitude, high speed nuclear attack penetration mission. Today, the B-1B is fully integrated into our strategic operational plans as our foremost penetrator. Planned improvements to the defensive avionics suite will increase the system's overall penetration ability. The Air Force recommends a two-phased approach (ALQ-161 "core" plus a radar warning receiver (RWR)) for addressing current ECM development shortcomings. In the face of an increasing threat, the combination of "core" and RWR programs will retain or exceed the current level of penetration capability available to operational commanders [deleted]. This plan also lays a solid foundation for enhancements which can insure the B-1B can meet projected threats in lesser defended areas beyond that time period.

START

QUESTION: Last year, General John Chain said that the US would divide "something less than 4900" warheads between land and sea-based missiles. This sounds to me like the Air Force plans to retain more than 1100 bombers and cruise missiles under START. Is this true?

ANSWER: Since a START agreement has not been finalized with specific limits and wording, it is too early to make definitive force structure decisions. However, current air-launched cruise missile and bomber counting rules may require slightly more than 1100 accountable bomber weapons to fully exploit the favorable leverage those rules provide. The 4900 limit is not absolute but simply an upper limit. Less than 4900 ballistic missile warheads still provides a balanced, modernized Triad, which assures continued deterrence.

START #4

QUESTION: If the Navy were allocated the same percentage of Ballistic missile RVs under START that it has today (70%), it would have about 3400 RVs, or 18 Tridents, rounded off. The FY 90 budget request funds the 17th Trident, and long lead money for the 19th Trident. Doesn't this run a serious risk of crowding out the Air Force in a POST-START US Strategic Force Posture?

ANSWER: Reducing warheads under START will require some restructuring of forces to maximize deterrent capability while meeting arms control objectives and limits. OSD, the Joint Staff, and the Services continue to study and evaluate possible post-START force structures as the tentative START agreement evolves. However, the exact structure of forces that will exist after START ratification has not been determined.

QUESTION: How important is it to have Penetration Aids on the Midgetman?

ANSWER: Based on today's threat and target base projections, it is not important for Small ICBM to have penetration aids to meet initial operating capability. At this juncture, the Soviet anti-ballistic missile (ABM) system deployed around Moscow does not pose a significant threat to projected Small ICBM targeting.

It is important, however, that the Small ICBM design protect the future addition of such a capability should the Soviets develop an improved ABM threat. Flexibility for future Single Integrated Operational Plan (SIOP) targeting requires Small ICBM to be capable of carrying penetration aids.

QUESTION: Is it more important than having a Second Warhead?

ANSWER: The scope of the issue is broader than a simple yes or no. As supported by the recent RAND "Congressionally Mandated Small ICBM Study", adding a second warhead reduces target coverage modestly for northern basing but significantly for southwestern basing. It also reduces targeting efficiency and limits penetration aid capability. In short, it provides reduced flexibility to accomplish the mission. However, it does allow us to procure the system at a significantly reduced cost for any given number of warheads and the option can be retained to change to one warhead with penetration aids if necessary at some future time.

QUESTION: If Soviet ABM Defenses were heavily upgraded, what would you do to ensure the effectiveness of the U.S. ICBM Force?

ANSWER: A range of options is available depending on the extent of the threat. [Deleted].

START #7

QUESTION: What are your latest cost estimates for the B-2?

ANSWER: Based on the Amended FY 90/91 President's Budget, the cost estimate for the B-2 is $70.2 billion in Then Year dollars ($20.8 R&D and $49.4 procurement).

QUESTION: What is the average cost for 132 B-2s, given that we have already spent about $15 billion on the program?

ANSWER: The average unit flyaway cost of the B-2 is $315 million (TY $). The cost to complete the program, given costs to date of $22-23B is about $43B in constant FY 89 $ and $47-48B in then year dollars, leading to average cost to complete of $325M (FY 89 $) and $360M (TY $).

START #8

QUESTION: Are the problems associated with the first Midgetman test launch failure understood and corrected?

ANSWER: The Small ICBM FTM-1 Mishap team has focused its investigation on the Stage II nozzle exit cone but has stated that the root cause of the anomaly may be difficult to identify. The Ballistic Systems Division's (BSD) engineering analysis team, aided by the Air Force Systems Command (AFSC) independent review team, is continuing the investigation and will propose corrective action, if necessary. The detailed engineering analysis is expected to take several months.

START #9

QUESTION: Does the Air Force plan to re-engine the B-52Gs that it wants to retain for conventional purposes?

ANSWER: There is no present plan to re-engine any B-52s.

QUESTION: How much would this cost?

ANSWER: If the Air Force modified the conventional B-52s, the latest Aeronautical Systems Division estimate is that each aircraft would cost approximately $34 Million.

QUESTION: What are the Pros and Cons of doing this?

ANSWER: The pros of re-engining the B-52 are numerous due to the advances in technology since the J-57 was first installed on the B-52 in the early 1950s. The only engine recently studied, the F-117-PW-100, would replace eight engines with four. It would increase the B-52 thrust by 37 percent and range by 70 to 75 percent. Fuel consumption would be reduced by 40 percent, engine maintenance costs by 40 percent, and engine maintenance manpower by 84 percent. These advantages are coupled with less noise and less pollution.

Re-engining also has some drawbacks. The initial investment cost of $1.8 billion in a fiscally constrained environment with competing priorities results in a program the Air Force does not now support. It is worth noting that, on an economic return basis, it would take 15 to 20 years.

QUESTION: Why didn't the Air Force propose re-engining the B-52 back in the 1970s?

ANSWER: The fiscal realities of the time dictated that either the KC-135 or the B-52 could be re-engined, but not both. The Air Force decided that the KC-135 would have far greater utility because it enhances a broader range of Air Force missions.

QUESTIONS SUBMITTED BY SENATOR ALFONSE M. D'AMATO

FB-111

QUESTION: Will the FB-111 presently stationed at Plattsburgh and Pease AFBs be retained by the Strategic Air Command or are they going to be shifted to the Tactical Forces?

ANSWER: The FB-111 aircraft are scheduled to transfer to the Tactical Air Forces (TAF) in accordance with the current TAF plan beginning in FY 90.

SHORT-RANGE ATTACK MISSILE II

QUESTION: What is the status of the Short Range Attack Missile II Program?

ANSWER: The Short Range Attack Missile II (SRAM II) is in Milestone II, Full Scale Development (FSD). The overall program is on track to develop and procure a replacement for the Strategic Air Command's (SAC's) aging SRAM A. In FY 89, the Air Force is finalizing designs for the air vehicle and major subsystems including the rocket motor, avionics software, and training equipment. The critical design review (CDR) was started in May and will be completed by December 1989. CDR completion will be approximately 6 months later than originally scheduled. This is due to the fact that the initial "Pathfinder" rocket propellant failed slow temperature cycling tests. An alternate, more stable propellant mixture, was tested and then selected. This propellant will meet the 15 year shelf-life requirement and support a 25-year test program. Six additional development rocket motors are being produced and fired to further verify the propellant's performance. The additional tests will be completed before the CDR is finished. Payment has been withheld from the prime contractor, Boeing Aerospace, until then. Neither the first flight test in September 1990, nor SAC's April 1993 initial operational capability, will be affected. The Air Force is protected under the fixed price contract ceiling which is currently $320.0 million. FY 90 represents the peak of program R&D funding ($217.0 million of total $1069.8 million). FY 90 is the first year for procurement funding with $10.8 million. The procurement funds are primarily for long lead, low risk development items, such as raw propellant chemicals, ring laser gyros, computer chips, and flight control actuators. These items have industry-wide long lead times.

CLOSE AIR SUPPORT

QUESTION: What is the status of the program to develop a follow-on to the A-10 for Close Air Support?

ANSWER: Currently, there is no "program" to develop a follow-on to the A-10 for close air support (CAS). As tasked by Congress, DOD is preparing to conduct an operational test of alternative close air support aircraft. Test results will allow us to determine and develop the optimum follow-on CAS aircraft.

The Amended President's Budget funds the enhancement of 225 A-10s for CAS as well as 146 Block 30 F-16s for CAS and battlefield air interdiction (BAI). It also initiates a separate night systems development program for CAS/BAI aircraft. These efforts will have a positive impact on the Air Force's ability to support the Army on the battlefield. However, they constitute a "gap-filler," and the solution for replacement of the A-10 is still not funded.

SUBCOMMITTEE RECESS

Senator **Inouye**. The subcommittee will recess until tomorrow at 9 a.m. in this room, when we will review military manpower and personnel issues with the Deputy Assistant Secretary of Defense for Resource Management and Support, Mr. David Berteau.

[Whereupon, at 10:25 a.m., Wednesday, June 7, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

THURSDAY, JUNE 1, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:05 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Bumpers, Stevens, D'Amato, Cochran, and Specter.

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE NAVY

STATEMENTS OF:

HON. H. LAWRENCE GARRETT III, SECRETARY OF THE NAVY

ADM. C.A.H. TROST, CHIEF OF NAVAL OPERATIONS, DEPARTMENT OF THE NAVY

GEN. A.M. GRAY, COMMANDANT, MARINE CORPS

OPENING REMARKS

Senator INOUYE. This morning the Subcommittee on Defense Appropriations will hear from the Secretary of the Navy, Hon. Lawrence Garrett III, Adm. Carlisle A.H. Trost, Chief of Naval Operations, and Gen. A.M. Gray, Commandant of the Marine Corps, regarding the fiscal year 1990 amended Department of the Navy budget.

The funding request for the Department of the Navy for fiscal year 1990 is $95.9 billion, $3.8 billion below the January Reagan budget but $1.3 billion above the level provided in fiscal year 1989; $9.1 billion of the total is requested to support the Marine Corps.

The amended budget proposes many changes both in force structure, with the reduction of 5,600 personnel, transfer of ships to the Reserve force, and early retirement of ships and aircraft and modernization, with the much-publicized cancellation of V-22 and F-14D production, cancellation of a final SSN-688 submarine, and delays in the T-45 trainer and the SH-60F ASW helicopter programs. The amended budget does increase the CH-53 helicopter program to support the Marine Corps.

Thus, the amended budget reflects a major shift for the Navy from the 600-ship, 15-carrier fleet of the Reagan administration to a smaller force with 14 active carriers. The fleet and fleet marine forces are called upon in peacetime to protect sealanes and sealines of communication, as in the Persian Gulf, provide political, conventional and nuclear presence, and provide flexible power projection.

In my home State, the U.S.S. *Arizona* serves as a constant reminder of the hazards of sailing in harm's way. I offer this subcommittee's condolences on the recent tragedies on the *Iowa, America,* and *White Plains*.

I look forward to your testimony and to working with you to resolve the Navy issues facing us.

Secretary Garrett, Admiral Trost, and General Gray, welcome. Mr. Secretary, please proceed, sir.

STATEMENT OF HON. H. LAWRENCE GARRETT III

Secretary GARRETT. Thank you, Mr. Chairman, members of the committee. I welcome this opportunity to review with you the posture of the Navy-Marine Corps team, and to discuss with you the Navy Department budget for fiscal years 1990 and 1991. I would ask that my formal report on the posture of the Navy and Marine Corps be made a part of the record.

Mr. Chairman, distinguished Members, our Navy and Marine Corps remain ready and strong today. The peace we enjoy, I think, is in large measure due to your leadership and support in the rebuilding and modernizing of our naval forces throughout this past decade. Today's fleet is a worthy and credible deterrent to our adversaries and, as history demonstrates and as you so well pointed out, Mr. Chairman, a principal military means of protecting American interests around the globe.

As we speak today, more than 90 ships are forward deployed, with over 100,000 sailors and marines embarked. The *Theodore Roosevelt* and *America* battle groups are in the Mediterranean, and the *Ranger* battle group is in the North Arabian Sea. The destroyer *Preble* is under NATO command as part of the standing naval force Atlantic. The amphibious ships *Fort McHenry* and *Cleveland* are supporting oil cleanup operations in Alaska.

Five Atlantic fleet ships are completing an 18-day antidrug patrol, and four Pacific fleet ships are on drug patrol duty, supported by Navy P–3 patrol aircraft.

The people aboard these ships and aircraft, who are ready to go in harm's way on our behalf, deserve up-to-date weapons, realistic training, and dependable materiel support. Our program for fiscal years 1990 and 1991 reflect the reality of very sharp fiscal reductions.

The Navy and Marine Corps have absorbed $3.9 billion in additional cuts for fiscal year 1990, and $1.9 billion in cuts for fiscal year 1991.

Mr. Chairman, we are working very hard to mitigate the impact of these cuts wherever possible, to maintain the balanced overall program necessary to support our many fleet commitments. Our highest priority when considering necessary reductions is, and will remain, the well-being of our people. We are taking care to protect compensation, medical care, and other key quality-of-life programs to attract and retain the high-quality volunteers who are absolutely indispensable to Navy and Marine Corps readiness.

Funds for steaming days and flying hours are preserved to maintain our level of training and to support the fleet's forward presence in key ocean areas of the world. Despite a lower level of funding, alliances clearly must be maintained, friends reassured, and aggressors deterred. It will clearly be more difficult, but the Navy and Marine Corps will do the job.

Mr. Chairman, the watchword in constructing this program that you have before you and in accommodating those reductions was balance—balance in terms of force structure, readiness, modernization, and sustainability, balance among warfare areas to preserve overall combat capability and balance among present needs and future investments.

We need to counter today's threats, both Soviet and in the Third World, at the same time that we build our future deterrent. Clearly the significance of our current naval superiority must not be lost among what are admittedly competing priorities. Our national military strategy of forward defense has, for the most part, maintained security and stability around the world. Naval forces have been an essential pillar of that strategy.

PREPARED STATEMENT

Because of their mobility, flexibility, and their readiness, I see every indication that strong, balanced naval forces will remain absolutely essential to preserve the peace and stability in the world.

Now I will ask Admiral Trost to comment.

[The statement follows:]

STATEMENT OF H. LAWRENCE GARRETT III

SECRETARY OF THE NAVY

ON THE

POSTURE AND FISCAL YEARS 1990-1991 BUDGET

OF THE U.S. NAVY AND MARINE CORPS

THE NAVY-MARINE CORPS TEAM AND NATIONAL DEFENSE

The Deployed Fleet: U.S. Forward Presence

The Navy and Marine Corps team supports our National interests in every region of the globe on a daily basis. Forward deployments deter war, bolster allied resolve, reduce reaction time to potential areas of conflict, and provide visible evidence of American interest, military capability, and the determination to ensure free access to international waterways and airspace.

The Fleet and Fleet Marine Forces undergird U.S. foreign policy around the world.

- Soviet Union and Eastern Europe: Naval presence and exercise activity contains Soviet expansion and serves to deter Soviet aggression.
- Western Europe and NATO: The Fleet and Fleet Marine Force support the cohesion and unity of NATO. Together with our allies, our forces constitute a credible deterrent against aggression on the NATO flanks.
- Middle East and South Asia: Seapower fosters the security and prosperity of Israel and our Arab friends. Our activity in the past year has helped to curb state-sponsored terrorism and to assure the continued access of the free world to the vital resources of the region.
- East Asia and the Pacific: In the Western Pacific, the presence of the Fleet gives credence to our security agreements with Japan, South Korea, Philippines, Thailand, and Australia. Recent improvements in our deployed capabilities have kept pace with the significant growth in Soviet Naval capabilities in the Pacific.
- Africa: Port visits and exercises promote good relationships with nations who share our concern for the stability and security of the region.
- Western Hemisphere: Naval presence, exercises and our cooperation with friendly states in the region are crucial in countering the expansion of Soviet, Cuban and Nicaraguan influence. Last year Navy and Marine Corps aircrews flew more than 7000 hours, and Navy ships with embarked Coast Guard teams provided more than 2000 steaming days in support of national drug interdiction efforts.

The United States has defensive alliances with more than 40 countries. Our treaty obligations include NATO, the Rio Treaty with American states, and bilateral agreements with the Republic of Korea and Japan. Our leadership of alliances and coalitions depends on our capability and willingness to meet solemn commitments to allies and friends. Seapower provides to the President a broad range of options which lend credibility and true flexibility to NATO's strategy of "flexible response."

The Maritime Component of U.S. National Security Strategy

Our Strategy derives from the principles of deterrence, forward defense, and allied solidarity. It calls for the early and flexible positioning of maritime power to deter war, and if required, to prevail wherever deterrence may fail. It is fundamentally a competitive strategy, which would take advantage of our strengths against the weaknesses of our potential adversaries. This Maritime Strategy is a doctrine shaped by changes in threat, force levels and technology. It is relevant to the spectrum of contingencies, from peacetime presence and regional conflict to global war.

In the unlikely event of global war, the success of allied efforts will depend directly on our ability to control vital ocean areas, including the North Atlantic and Norwegian Sea, the Mediterranean, and the Pacific and Indian Oceans. In addition, the sealift embodied in U.S. and Allied merchant fleets will be strained to sustain these forces. Our reliance on overseas sources of strategic materials and our need to supply friendly forces will also increase demands on the merchant fleet.

Future events are certain to highlight American dependence on the sea lines of communications and access to key ocean areas adjacent to the Eurasian continent. Continuing reductions in our access to overseas bases will increase dependence on our sea-based forces. The inherent flexibility and staying power resident in the Fleet and its amphibious forces will remain major components of our strategic posture.

Dealing with Regional Conflicts

We have seen in the recent past how easily regional instability can grow into conflicts with serious international ramifications. Forward deployed naval forces, with their embarked Marines, act to deter the spread of hostilities and, when necessary, can move quickly to support U.S. interests or isolate aggressors.

The sophisticated and ready forces on which our maritime superiority depends are also critical to the credibility of our peacetime presence and to the deterrence of lower-order conflicts. Because of the proliferation of weapons technology in the Third World and the high technology weapons available in the international arms market, the capabilities we need to deal with Soviet forces are in many cases little different from those we would need in Third World contingencies.

Another historic development affecting our capabilities to deal with these contingencies is the erosion of our overseas base network. The total number of nations and dependencies in which the United States maintains base sites has dropped from nearly 100 in 1947 to 36 today. Future negotiations may reduce our access even further, and our recent Persian Gulf experience shows how sensitive nations can be to foreign military presence, and how military options are likely to be constrained to forces independent of bases ashore. These developments should cause us to reexamine the priority assigned to forces which can operate independent of base access and overflight rights.

Arms Control

American seapower will remain a key advantage in the military balance with the Soviet Union. The proof of our competitive edge can be seen in the details of Secretary Gorbachev's proposals to reduce our advantage at sea through negotiations. In fact, the Soviets are active on a number of fronts to reduce this advantage.

° The Soviets propose to restrict U.S. naval activity, in the Baltic, Norwegian and Greenland Seas and complicate the delivery of essential reinforcement to our NATO allies in a crisis.

° The Soviet offer to exchange facilities in Cam Ranh Bay for U.S. bases in the Philippines is aimed at eroding our ability to defend Pacific allies and strategic lines of communications through the Indian and Pacific Oceans.

° The timeworn proposal for withdrawal of U.S. and Soviet ships from the Mediterranean would jeopardize our ability to reinforce NATO's Southern Flank, and Israel, and greatly complicate access to the resources of the Middle East.

In short, the Soviets recognize that many of our vital interests lie on the mainland of the Eurasian continent where they enjoy the advantage of relatively secure interior lines of communications. Without free access to vital maritime areas adjacent to the Eurasian land mass, we would concede an enormous strategic advantage to the Soviets. Moreover, our approach to conventional arms control must bolster the security of our allies. Proposals which seek to limit communications with our allies are at odds with our aim to promote cohesion and strength within our alliances.

U.S. Deterrent Moving to Sea

The march of technology and a changing world environment highlight the value of sea-based deterrent forces. The accuracy and effectiveness of modern weapons permit naval forces to carry significant American combat power and to project and concentrate that power when and where it may be needed. New submarine launched ballistic missiles, cruise missiles, over-the-horizon amphibious assault capability and carrier-based aircraft will amplify the deterrent power of naval forces in the future.

The U.S. ballistic missile submarines (SSBNs) at sea are the most survivable and cost-effective leg of the strategic triad. The continued modernization of a secure sea-borne retaliatory force, with communications reliability comparable to land-based systems, is vital to American strategic security. Modernization of the SSBN force with new Trident submarines and D-5 missiles is underway, on time and on budget.

Submarine-based missile systems offer another potential benefit in wartime as a means for augmenting or reconstituting space-based systems. Moreover, sea-borne systems, with their inherent mobility and freedom from base or overflight restrictions, hold great promise as cost-effective, flexible, and survivable platforms to support our strategic defenses and provide means to counter enemy space systems.

Force Structure

Today, our power projection forces--the aircraft carrier battlegroups, battleship battlegroups, and amphibious forces with embarked Marines--embody a wide range of capabilities relevant to a variety of contingencies including limited war, global conflict and, on a day-to-day basis, naval presence. These forces do not depend on host nation acquiescence or permission. They confer on the United States unique capabilities overseas, and a degree of flexibility critical to the deterrence of aggression in the future. The Fleet Marine Forces are America's force in readiness. They are the essence of our rapid deployment capability--mobile, flexible, and uniquely responsive to national tasking.

Decisions on Navy and Marine Corps force structure must take into account key factors of strategy, global commitments, operating tempo, and the availability of resources. Budget restrictions will limit our Fleet's power projection forces to 14 aircraft carrier battlegroups. Early retirements of surface combatants and aircraft, and the transfer of ships to the Naval Reserve Fleet will mean a decreased presence overseas, increasing, in some cases, the time required to respond to emergent tasking. Fleet deployments will be modified to accomodate these reductions to our force structure, ensuring that our Sailors and Marines are afforded a reasonable time in their homeports.

We must build and maintain the naval forces required to confront challenges in this still-troubled world while keeping peacetime operations within sustainable limits. Simply put, we must provide sufficient time in homeport and the necessary resources to maintain our ships and airplanes, and to keep operating tempo at levels which do not drive skilled personnel out of the Navy.

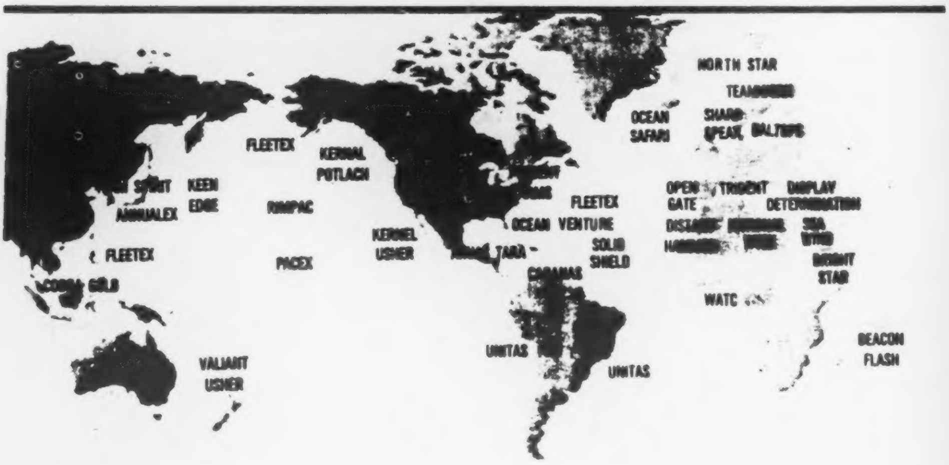
Naval Operations in 1988

The success of our recent operations in the Persian Gulf was made possible by the resurgence of our naval strength during the 1980s. Our Sailors and Marines, with critical support from the Army and Air Force, were able to meet the challenge of defending freedom of navigation in the Gulf because they were motivated and because they were operating ships, aircraft, and combat systems maintained at unprecedented levels of readiness. There is little argument today that the efforts of our naval forces in the Gulf permitted our shipping and that of the free world to transit safely, thereby ensuring unimpeded access to the commerce of this vital region. The contribution of our forces to the termination of the Iran-Iraq war has been recognized throughout the free world.

Our surface combatants safely escorted more than 280 Earnest Will ship transits in 19 months. Our minesweepers located and destroyed more than 60 mines, and a variety of forces turned back numerous small boat assaults on shipping. Most importantly, the sobering presence of successive carrier battlegroups in the North Arabian Sea assuredly deterred any significant escalation of attacks on U.S. and friendly forces.

Beyond the Middle East, the Navy and Marine Corps have been active around the world maintaining the levels of training and readiness indispensable to a credible deterrent. Our ballistic missile submarines completed 103 deterrent patrols in 1988. Ships of both Fleets engaged in major exercises which reaffirmed treaty commitments and developed joint and combined arms combat tactics in each major geographic area. Our major forward exercises in the North Atlantic and Norwegian Sea included NATO's Teamwork, Ocean Venture, Northern Wedding; in the Mediterranean, Display Determination, and National Week; in North Africa and the Middle East, African Eagle and Bright Star; and in the Pacific, Cobra Gold, Team Spirit, and RIMPAC. Finally we concluded Tall Pine, Cabanas, and UNITAS with friendly forces in this hemisphere.

MARITIME FORCES
JOINT AND COMBINED EXERCISES


NORTH STAR
OCEAN SAFARI
SHARP SPEAR
BALTOPS
FLEETEX
KERNAL POTLACH
SPIRIT
KEEN EDGE
ANNUALEX
RIMPAC
KERNEL USHER
FLEETEX
PACEX
COBRA GOLD
VALIANT USHER
FLEETEX
OCEAN VENTURE
SOLID SHIELD
TARA
CABANAS
UNITAS
UNITAS
OPEN GATE
TRIDENT
DISPLAY DETERMINATION
SEA WIND
BRIGHT STAR
WATC
BEACON FLASH

Summing Up

Among the most impressive displays of Allied capability and solidarity was last fall's exercise Teamwork 88 in the Norwegian Sea. This NATO reinforcement exercise featured participation by naval and amphibious assault forces of seven NATO countries. Almost 33,000 U.S. personnel and much of the U.S. Second Fleet participated. One of the participating carrier battlegroups, the USS Forrestal (CV-59) battlegroup, joined this exercise following a deployment in the North Arabian Sea and the Mediterranean. During this deployment, USS Forrestal (CV-59) attained the highest readiness ratings ever for a deployed carrier. Such readiness is the hallmark of today's Navy and Marine Corps.

RESOURCES

The President's budget request for FY 1990-91 represents less than five and one-half percent of our GNP. The Navy Department's share of the defense budget represents a well-balanced program to deliver the greatest combat effectiveness possible with the dollars allocated. The understandable decline in resources available for defense has challenged us to tighten our force, and to make hard decisions on every dollar spent for readiness. I believe that we have met the challenge, and have managed our smaller share of these resources without major reduction to our ability to meet national commitments, and without breaking faith with our people.

The revisions made necessary by the overall defense budget cuts of the last four fiscal years have had cumulative effects. First, there is increased risk which attends the curtailment of some promising development and procurement programs in order to fund our more urgent operating needs. Second, efficiencies are lost when we introduce change and instability in procurement programs that increase business costs. Our inability to fully fund necessary programs in FY 1990-91 will predictably make future modernization of our existing force structure even more expensive.

Budget Priorities

In real terms, Navy and Marine Corps funding remains below that of any fiscal year since 1984. We have trimmed every possible account in order to support National commitments while continuing such high priority programs as the A-12, DDG-51, Trident D-5, and the SSN-21. Several ships, including the aircraft carrier USS Coral Sea, will be retired early. The V-22 tilt-rotor aircraft program will be terminated. The budget submitted for FY 1990-91 reflects the clear priorities established in guidance from the President and Secretary of Defense. We have supported and funded personnel and material readiness, and endeavored to protect force structure gains of the past years in an overall balanced program.

The Department's aim is to continue maximizing the deterrent and combat capability of our forces for the future through prudent investment and careful management. We must continue to ensure that there will be sufficient tools for our Sailors and Marines to fight. We will need help from Congress to buy ships, aircraft, and weapon systems which are affordable in the numbers necessary. Our emphasis has been on capability at an acceptable cost. The capital investment made in the Fleet has been repaid throughout long service lives of our ships and equipment, some much longer than we desire, and in the purchase of new equipment which complements old. The Navy and Marine Corps have been manned at levels consistent with a constrained budget. They have been equipped and supplied to meet projected threats. Clearly, if we are to adhere to the planning objectives and management concepts embodied in the budget, we will need the stable funding levels being requested this year and the increases planned for the future.

The FY 1990-91 revised budget represents the correct balance between competing requirements including force mix, readiness, sustainability and investment in research and development. This carefully structured budget will support operations at peacetime norms and current levels of readiness. The budget will impose certain delays on the pace of modernization and it will defer attainment of long-standing force goals in some areas.

SAILORS AND MARINES

The most striking accomplishment of the past eight years is the unsurpassed level of ability and dedication embodied in our Sailors and Marines. They are smarter, better trained, and better led than those of any potential adversary. With renewed public support, they have achieved the highest levels of personnel and equipment readiness in the Navy's 213 year history. Morale is high, and our Sailors and Marines feel a genuine sense of personal accomplishment.

Navy and Marine Corps people are a reflection of the youthful strength of this country. They willingly accept the challenge of long hours on duty, the intellectual demands of rapidly changing technology, and the long family separations that come with underway training and deployments around the globe. These volunteer professionals accept today's challenges with the faith that we will continue to support them and their families. Our Sailors and Marines are very proud to serve their country and to wear the uniform. They willingly sacrifice their own freedoms and serve honorably, in the expectation that their families will enjoy a quality of life comparable to their civilian counterparts.

Our Sailors and Marines are often on duty far from family and friends. They need the confidence that their families are cared for at home. Recent pay increases and housing allowances have helped to maintain a suitable quality of life for our people and their families, but by most estimates pay remains 11 percent below that of the civilian sector. Providing our men and women fair compensation and benefits is fundamental to personnel readiness. That is why the pay raises reflected in this budget are absolutely necessary. It is also the reason that we are determined to arrest any further erosion in the benefits provided to our Navy and Marine families.

Navy and Marine Corps Reserve

The Naval Selected Reserve has grown by more than 50 percent in the past seven years. In keeping with Congressional direction, the responsibilities and missions of the Naval Reserve are integral to the Navy's Total Force. Several critical missions are exclusively, or predominantly, entrusted to the Naval Reserve. These include our light attack helicopter squadrons, helicopter strike rescue and special warfare support, mobile inshore/undersea warfare and, within the continental U.S., heavy airlift and composite squadrons. Additionally, the Naval Reserve is now responsible for more than 80 percent of our Control of Shipping organization, cargo-handling battalions, military sealift personnel, and mine warfare ships. Upon mobilization, the Naval Reserve would provide more than 50 percent of our mobile construction battalions, fleet hospitals and special boat forces. Finally, the Naval Reserve provides almost 50 percent of naval intelligence personnel and 35 percent of the maritime air patrol capabilities we would need in wartime.

As a matter of routine, Naval Reservists train and operate with their mobilization commands in the Fleet. Their professionalism and commitment were very much evident in the Persian Gulf where full-time Reserve support personnel (TARs) and voluntarily recalled drilling Reservists worked side by side with their regular Navy counterparts.

Marine Corps planning, programming and doctrine integrate a fully trained and capable Reserve component into the active force for global war and regional contingencies. Upon mobilization, this Reserve component provides up to 33 percent of the Marine Corps' wartime manpower requirements, 40 percent of Marine tank battalions, 33 percent of the heavy artillery, 28 percent of the light attack aircraft, and 25 percent of the anti-aircraft missile capability.

Marine Corps Reserve improvements in combat capability over the past six years include equipping Reserve artillery battalions with the M-198 Howitzer in FY 1988 and FY 1989, increased deliveries of the TOW missile system in FY 1988, and final activation of a light armored infantry battalion in FY 1988. Marine Corps Reserve aviation upgrades include the activation of an additional AH-1J *Cobra* attack helicopter squadron and a new KC-130T inflight refueling squadron in FY 1988. In 1989, the Marine Corps Reserve will begin a transition from the F-4 to the F/A-18, an advanced aircraft with better commonality and full interoperability with the active wings. Additionally, three bulk fuel companies and two bridge platoons will be activated in FY 1989, in support of active component combat improvements.

In sum, we have met Congressional direction for the modernization and integration of Reserves into a genuine and ready *Total Force*. Our Reserves will be ready for selective call-ups in the event we find it necessary to supplement our active forces in real world missions, whether they be large contingencies or special situations designed to test our reserve capabilities and mobilization procedures.

Women in the Sea Services

The contribution of our uniformed women to Fleet and Marine Corps readiness is greater than ever, and it is expanding into almost every area of activity permitted by law. Presently, 9.2 percent of the Navy and Marine Corps enlisted personnel are women. Our FY 1991 goal is 9.6 percent. Women constitute 10 percent of our officers, and our FY 1991 goal is 10.6 percent. A variety of billets historically closed to females are being opened as career progression and opportunities expand for women in the naval service. The Navy has now opened to women 84 of 102 enlisted ratings, and all the officer communities except for submarines and special warfare. A refinement of the Defense Department's interpretation of the combat exclusion laws and modified regulations have facilitated the assignment of more women to sea-going billets, and permitted the assignment of women Marines to the Marine Security Guard detachments at embassies, and to the Marine Security Force aboard bases and ships. These measures have significantly improved career development and advancement opportunities for women by opening an additional 9,300 billets.

Women now serve at sea in 5,323 enlisted and 258 officer billets aboard submarine and destroyer tenders, repair ships, a training carrier, oilers, Military Sealift Command Ships, and more recently aboard Combat Logistic Force Ships. In naval aviation, 9,481 enlisted and 329 officers serve in maritime patrol, fleet composite, tactical electronic warfare, helicopter combat support and training squadrons. Women have recently been selected to command an aviation squadron and a combat logistics or support ship. Overall, career opportunities for women have dramatically improved. Active measures such as selective recruiting and pre-service counselling have also improved the balance between men and women in sea-intensive and shore-intensive ratings requiring technical training.

Recruiting

A strong national economy, a forecast decline in the eligible youth pool in the 1990s, and increased competition for young workers present a major challenge for Navy and Marine Corps recruiters. Recent survey results indicate that the Navy/Marine Corps awareness level among young people is well below that of the other services. While the Navy met recruiting goals for the ninth straight year, we will have some difficulties in attracting sufficient numbers of new enlistees. Competition from the civilian sector has increased, and budgetary constraints affecting our advertising and educational efforts will impact on our ability to attact the best and brightest to serve in the naval service. Although over 90 percent of Navy recruits in FY 1988 were high school graduates, the number of recruits in the lowest mental group (IV) has also increased. The Marine Corps, however, continues to meet quantity and quality recruiting goals, with high school graduates accounting for over 95 percent of its non-prior service accessions. If we are to attract quality recruits for the future, we must commit the necessary resources to recruiting to meet the challenge in competing with civilian industry and our sister services.

Navy Medicine

Navy medicine is structured and manned to provide medical care in wartime to active duty military personnel, as well as to deliver extended health care to active duty personnel, their dependents, military retirees and their dependents, and survivors in peacetime. For the past several years, disturbing trends have emerged as patient workload shifted from uniformed health care facilities to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

This shift in workload limited the number and variety of cases referred to teaching facilities, effectively reducing the experience of military physicians under instruction. Concomitant problems with faculty retention, rotation, and manning have also put our Graduate Medical Education Programs at risk. The increasing price of CHAMPUS led to more out-of-pocket expense for Navy and Marine Corps families and the Navy's overall costs increased dramatically as CHAMPUS costs rose. More importantly, the erosion of our in-house care to Navy and Marine families affected morale and retention within the Navy Medical Service as well as the rest of the naval service.

In 1988, the Secretary Ball established a Medical Blue Ribbon Panel, chaired by the Vice Chief of Naval Operations, to recommend actions which would improve access to Navy hospitals and clinics for all beneficiaries, reduce the dependency on CHAMPUS, and revitalize Graduate Medical Education. The thrust of the panel's recommendations is to increase the use of our own facilities, thereby improving access, promoting our education programs and reducing our dependency on CHAMPUS. Congress has assisted greatly by supporting our efforts with enabling legislation and funding. The results of this responsive Congressional support are already visible.

Ten NAVCARE clinics are now fully operational, and several sites have opened additional clinics. These clinics work in combination with our personal services, emergency room and ambulatory care contracts to bring the work back into the Navy medical community. We are also taking full advantage of the CHAMPUS "partnership" program which permits CHAMPUS providers to see our patients in our Navy hospitals and clinics. From the patients' point of view, they should now receive the required care in the preferred Navy treatment facilities. These arrangements should help to reduce our reliance on CHAMPUS, and thereby increase the productivity of our own resources.

The budget now under consideration includes funding for some of our critical medical initiatives. Several legislative proposals to improve the medical practice environment for our patients and our staff will soon be presented for Congressional review. All of our attention is focused toward one goal: to provide first rate and affordable health care for all Navy beneficiaries.

DEPARTMENT OF THE NAVY PROGRAMS

Today's Navy and Marine Corps are vastly improved over the those of the recent past. A few examples of systems now in the Fleet or close at hand will serve to highlight our progress:

- Anti-air warfare: Delivery of CVN 69/70/71, addition of Aegis cruisers and destroyers, New Threat Upgrades to our major AAW surface combatants, Vertical Launch missiles, and Close-In Weapon Systems installation aboard many of our ships.

- Antisubmarine warfare: SSN 688 Improvements, SSN 21, P-3C patrol aircraft Updates II and III, Lamps III helicopters, and SQQ-89 and BQQ-5C sonar systems.

- Antisurface warfare: Procurement of Harpoon, Tomahawk, commissioning of the last battleships, F/A-18 strike aircraft, and HARM antiradiation missiles.

- Electronic warfare: Activation of 11th EA-6B Squadron, the EA-6B EW upgrade (ICAP II), Outboard shipboard signals acquisition system.

- Mine warfare: Delivered MCM-1 class and MHC-51 class mine countermeasure ships.

- Amphibious warfare: Delivery of LSD-41, LHD-1, and LCAC amphibious assault ships and craft, AV-8B close air support aircraft, and C/MH-53 and AH-1W helicopters.

- Ground combat: Infantry weapons and support equipment have been greatly modernized.

- Strategic Forces: Introduction of the new D-5 missile system aboard Trident SSBNs.

These programs represent major improvements over the weapons in service only 10 years ago.

Program Planning and Integration

The Department of the Navy's planning action for the future is based on comprehensive working papers, or master plans, which support our requirements and programs with in-depth analyses of requirements and solutions. A few examples illustrate the attention we give to the long-range implications of our procurement decisions:

- Navy and Marine Corps Aircraft Procurement Plan. The aviation portion of the FY 1990-91 budget continues and expands initiatives to ensure naval aviation's role in projection of U.S. maritime power. Commitments by the Navy and Air Force in cooperative development of the A-12 Advanced Tactical Aircraft (ATA) and the Advanced Tactical Fighter (ATF) will provide the benefits of common aircraft design and procurement.

- ASW Master Plan. The Maritime Strategy defines the requirement for superiority over a Soviet submarine force that grows quieter and more capable every day. The updated ASW Master Plan describes the roles of each ASW platform--aircraft, submarine, surface ship, and surveillance system. In addition, it outlines plans for developing technologies such as full spectrum acoustic processing, low frequency active sonar, and non-acoustic ASW as complements to existing systems.

- Surface Combatant Force Requirements (SCFRs) Plan. The problem of block obsolescence of our surface combatants can be managed by building ships that will retain their usefulness and are able to contribute to the Fleet's combat power as they age. Under this plan, we will build a warship that can handle the future threat, and to procure this Battle Force Combatant at a sustained and efficient rate, avoiding expensive new starts or major redesign efforts.

- Marine Corps Long Range Plan and Marine Air-Ground Task Force (MAGTF) Master Plan. The Marine Corps Long Range Plan, now in the final stages of development, will define goals to guide the development of doctrine, training, force structure, and materiel. The MAGTF Master Plan outlines the operational foundation for organizing, manning, equipping, training, and developing doctrine and techniques for MAGTFs of the Fleet Marine Forces.

- Joint Navy/Air Force Air-to-Air Missile Master Plan. The Navy and Air Force, following Congressional direction to avoid duplication of effort, have agreed to an integrated air-to-air missile plan to guide all air-to-air missile development and procurement, product improvements and related technologies. Affordable plans and timely execution by the designated lead Service are ensured by the Joint Air-to-Air Missile Office.

Research and Development

Our research and development efforts focus on technologies with the greatest potential for improving combat capability in each warfare area. Two studies completed in the past year examined the current status and forecasts for such key technologies. A long-term effort, Navy-21: Implications of Advancing Technology for Operations in the Twenty-First Century by the Naval Studies Board of the National Research Council, outlined the technological progress which will be required over a time period extending well into the next century, beyond the expected lives of all existing ships, aircraft, and submarines. The Quo Vadis study by the Director of Navy Research and Development Requirements, Test and Evaluation, reviewed our current research and development program in the light of the long and mid-term trends, to ensure that our efforts are focused on the warfare areas with the greatest leverage in future combat scenarios.

Navy-21 evaluated the implications of advancing technology for naval warfare from the present to the year 2030. The study looked at effects of advanced technology on Maritime Strategy, and potential threat responses. The study identified several technologies that are likely to drive combat potential over the next several decades. In particular, spectacular advances in surveillance, communication, and information technology will make it possible to deploy systems which will greatly improve our ability to locate and identify targets, transmit the information to commanders and guide weapons to the targets over very long distances.

Key Technologies for the Future

Future missions will utilize every type of modern electronic device--sensors for surveillance, target location, precise navigation, and weapons guidance; advanced computers for data processing and fusion, computing power, and communications. Advances in material as well as electronics are providing tactical opportunities in stealth and counterstealth weapons systems developments undreamed of only a few years ago. Automation, robotics, and advanced guidance and control systems for unmanned underwater and air vehicles will be key factors in the 21st Century. We have identified investment needs today to achieve advances in weapons propulsion and lethality. We are striving to bring new forms of marine electric propulsion, power generators and transmission, hull forms, integrated weapons systems, and new ship designs out of the labs and into the Fleet. Most important are the advances in software used in communications architecture and information processing systems. Other advances include improved materials for superconductors, low-loss fiber-optic cables, composite materials for structures, and gallium arsenide for advanced electronic circuits.

Advances in missiles and unmanned craft, especially those bearing on guidance, performance, stealth, and cost reduction will foster longer-range and more effective airborne surveillance and targeting systems for the Fleet. Missile systems will extend the reach of platforms that are likely to remain longer with our active Fleet, highlighting the importance of planned product improvement for both forces and systems. Unmanned aerial and undersea vehicles will bring a new dimension in combat capability.

To streamline the development of technologies into operational systems, we are increasing the attention we devote to the early phases of advanced development. For example, we established the Advanced Technology Demonstration (ATD) program in FY 1987 to uncover potential problems prior to our undertaking large investments. It is now the Navy's primary means to transition high-payoff technologies into weapon systems. Some Navy advanced technology demonstration projects include:

- Ongoing
    - Advanced Fiber Optics Technologies

- Fiber Optic Tethered Air Weapon
- Undersea Weapons Technology
- All-Optical Towed Array
- Unified Network Technology
- Airborne Transient Processor
- Fiber Optic Tethered Torpedo
- Surveillance Infrared Search and Track
- Magnetic and Acoustic Detection of Mines
- Quiet Weapon Launch
- Adaptive Monopulse Countermeasures
- Advanced Assault Amphibian Demonstrators

•In Planning

- Intelligent Welding System
- Air/Surface Data Fusion
- Synthetic Red Blood Cells
- Air Weapon Neural Computer
- Undersea Weapons Guidance and Control
- High Power Microwave Technology

Shore Facilities

A well-manned shore establishment in good repair is also vital for the support and readiness of our Fleet operating forces. Our FY 1990-91 Military Construction (MILCON) budget will repair the most serious deficiencies in our physical plant and construct those facilities which are necessary to support our missions. Construction of new family housing in high cost areas and at our remote homeports remain the highest Navy priority. The Marine Corps continues to revitalize its training and maintenance facilities, both active and reserve, while also devoting attention to quality of life improvements. We have not relied solely on MILCON funding to improve the performance of the shore establishment. New public/private ventures, improved facility maintenance operations, and innovative contracts will be used to get more efficiencies in supporting the Fleet. With our reduced budget request, we need to emphasize creative approaches to repair and construct the facilities necessary to sustain Fleet readiness and maintain the quality of life which is imperative for our people.

Base Realignment and Closure

Navy and Marine Corps base consolidation efforts since the early 70s reduced the shore establishment below the minimum required for maintenance and training of our current Fleet. The rebuilding efforts in the 1980s strained the capacity of our facilities ashore, and required the construction of some additional infrastructure. Last May, Secretary of Defense Carlucci chartered the Commission on Base Realignment and Closure. With supporting legislation from Congress, the Commission set criteria for identifying bases in excess of our defense needs, or which may be consolidated to produce substantial savings while carrying out essential functions. The Department of the Navy cooperated with the work of the Commission and presented complete data on all its facilities and measures of their utilization.

In December 1988, the Commission fulfilled its charter by proposing a list of base realignments and closures. In January 1989, the Secretary of Defense approved actions which, subject to final Congressional approval, would affect the following Navy facilities:

- The Naval Station New York (Brooklyn) will be closed. Its activities will be moved to Naval Station Staten Island to support the seven ships of the USS Iowa (BB-61) battlegroup when it arrives in the area in 1990.
- The Naval Hospital in Philadelphia will be closed.
- The Naval Reserve Center (Coconut Grove), Miami, Florida will be closed. New construction will make the Coconut Grove Center redundant.
- The Naval Station Puget Sound (Sand Point), Washington will be partially closed. Fleet support units will be based at the planned naval station in Everett, Washington.
- The expansion of Naval Station San Francisco (Hunters Point), California will be cancelled.
- The construction of new homeports at Galveston, Texas and Lake Charles, Louisiana will be cancelled. The planned naval station in Ingleside, Texas will be expanded to serve USS Wisconsin (BB 64) battlegroup ships originally scheduled for Galveston and Lake Charles.

We are developing plans now to implement these realignments and closures, mindful of our responsibility to the communities affected by these actions. Moreover, we are committed to minimizing any adverse impact on our service members, civilian employees, and their families as we make the necessary adjustments.

Strategic Homeporting

By 1968, the build-up during the Vietnam war found the Navy with 976 ships dispersed among 65 home ports, using portions of the aging World War II base structure still in place. As the Fleet decreased in size to its low of 479 in the late 1970s, the number of home ports shrank to 34. At the end of Fiscal 1991, the Fleet will stand at 563 ships. This has made necessary the construction of a modest number of new facilities.

The logic of the Strategic Homeporting Plan applies today even though the program has been modified as a result of the Commission on Base Realignment and Closure. Strategic homeporting will make our force more survivable and will disperse our industrial shipbuilding and repair base. Our Navy simply must have the pier space and the industrial support of more than one or two major ports on each coast. With contributions of local funding, the Strategic Homeporting Program is a sound concept that is now taking shape.

Environmental Action

The Department of the Navy is committed to practical, effective measures to protect the environment and to eliminate the pollutions of our oceans. We have adopted waste disposal standards that are more stringent than those required for the maritime industry. We are installing oil/water separators to eliminate the discharge of oily waste from ships' bilges, controlling medical waste, and eliminating the disposal of plastic at sea.

Navy and Marine Corps installations are conforming to the Comprehensive Environmental Response, Compensation and Liability Act, and are working to identify sites and negotiating agreements for cleanups wherever wastes were improperly handled in the past. We are focusing on the management of currently generated hazardous waste under the Resource Conservation and Recovery Act. The best policy is simply to generate as little hazardous waste as possible. We have set a goal of 50 percent reduction of hazardous waste generation by the end of 1992. For example, at Keyport, Washington, we have replaced the practice of stripping chemical paint from torpedoes with a dry plastic media blast, eliminating hazardous solvents and 3,500 gallons per week of hazardous wastewater. At the Marine Corps Air Station, Cherry Point, North Carolina, better hazardous waste management has cut waste generation from 9.2 million pounds in 1983 to 1.32 million pounds in 1988.

Navy regulations in existence for 20 years prohibit discharge of trash at sea within 25 nautical miles of any U.S. or foreign coastline. Trash discharged beyond 25 nautical miles must be sunk. Oily bilge and ballast water cannot be discharged within 50 nautical miles from any shoreline. Oil/water separators will be used on all our ships to meet the latest international standards which approach zero discharge of oil at sea. Over the last 15 years, the Navy has spent over $500 million to retrofit all ships with systems for the collection, holding and transfer of shipboard-generated sewage, and over $150 million on pier sewer connections to accept ships' waste. All commissioned ships, service craft, and small boats are now equipped with wastewater systems to pump sewage ashore for proper treatment. The Navy is leading efforts to eliminate the disposal of plastics and medical wastes at sea. New procedures in the Fleet will reduce discharge of plastics by almost 70 percent. We now require all medical waste to be held aboard ship, consistent with the health and safety of the crew. It is off-loaded ashore for disposal in strict accordance with state and local regulations.

Sealift

We recognize that the continued decline of the U.S. Merchant Marine jeopardizes our ability to support a major mobilization and reinforcement effort. In the past eight years, the Navy has invested in sealift programs, including the procurement of ships and support equipment. In the final analysis, the inability of the U.S. Merchant Marine to compete in the international shipping market has caused the U.S. commercial fleet to decline more rapidly than Navy programs can recover lost sealift capability. Should the decline of the U.S. Merchant Marine not be arrested, it may be necessary to devote even more of our national resources to sealift in the future. A national program is urgently needed, to improve the ability of U.S.-flag and U.S.-owned ships to compete in the international trade.

DEPARTMENT OF THE NAVY MANAGEMENT

"I've been inside a submerged submarine while depth charges were going off all around it. I know what it's like to hear the vessel strain and shake and to pray to God that the people in charge of buying and building cared as much about the vessel as you do. I believe that the overwhelming majority of procurement officers and defense contractors do care that much. I am determined to make sure that every single one of them does."

President George Bush,
to Sailors and shipyard workers,
Norfolk, Virginia, 31 January 1989

We share the President's determination to wring the last drop of waste and mismanagement out of the way we buy our weapons. Our acquisition program is unique within the Department of Defense, in that we purchase the full range of military hardware for land forces, amphibious assault, sealift, combatant ships, aircraft, and missiles. A highly professional group of Navy and Marine Corps managers execute over three million contract actions annually, valued at over $55.6 billion. These figures, which would put the Department of the Navy at the top of the FORTUNE 500, illustrate the management challenge faced by Navy leadership.

Management Initiatives and the Packard Commission

In improving program management, the Navy Department anticipated some of the key conclusions of the Packard Commission. For example, in 1985 we implemented a newly designated Material Professional program for officers, and shortened lines of communication to and from program managers. The Packard Commission pointed out that "there are certain common characteristics of successful commercial and governmental projects." These characteristics include:

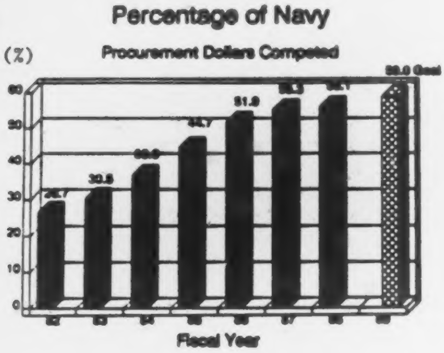
- Short, unambiguous lines of communication.
- Small staffs of highly competent professionals.
- An emphasis on innovation and productivity.
- Smart buying practices.
- Stable environment of planning and funding.

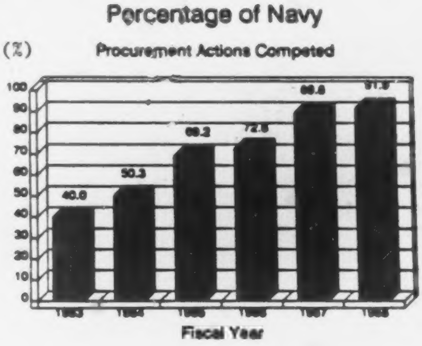
The Navy, working with the Department of Defense, spearheaded the implemention of the Packard Commission's recommendations to improve the management environment. Biennial budgets have been institutionalized to create a more stable basis for planning and funding, and multi-year procurements are being used where prudent. This biennial budget requests the largest number of multi-year procurements to date. Competition has been emphasized wherever possible. The acquisition chain-of-command from the Defense and Service Acquisition Executives to each Program Manager has been shortened, simplified, and made more responsive. Innovation, productivity, and "smart" buying have been emphasized successfully through programs such as Total Quality Management, ACTION Plus, centers of excellence, streamlining initiatives, productivity improvement, and "Could Cost." However, much more remains to be done with respect to certain Packard Commission recommendations: simplifying and recodifying procurement statutes; improving the partnership with Congress and industry; and continuing to improve the quality of acquisition professionals through training and improved personnel management.

Competition

Fiscal Year 1988 marked the completion of over five years since the Navy competition program was put in place and over four years since the implementation of the Competition in

Contracting Act (Public Law 98-369). Now, as then, the Department of Defense is finding ways to use competition effectively to obtain higher quality products with fewer dollars. With the expected constraints in the defense budget over the next few years, competition will continue to be a fundamental business strategy of the Department of the Navy, to ensure the best possible value in each acquisition.





Competition is now institutionalized, and has been successful in reducing costs. The Navy exceeded the established competition goal of 53 percent for FY 1988 by competing 56.1 percent of its procurement dollars and 91.9 percent of the contracting actions. During FY 1989, without a nuclear carrier acquisition, the Navy will achieve 100 percent competition in its shipbuilding programs. In addition, the overall Navy FY 1989 goal has been increased to 59 percent, reflecting our confidence in further progress.

Two programs illustrate the success the Navy has enjoyed in competing acquisitions in FY 1988: the Tomahawk missile and the Trident submarine. Tomahawk continues to be a model competitive program for the Navy. Not only have prices continued to decline, but increased emphasis on quality in the program has cut the number of depot rejections in the inspection and acceptance process. Cost avoidance over the life of the program is now expected to exceed $3 billion. In the second illustration, the Trident class submarine was competed, which reflected savings of $74.1 million. The construction award was made on initial offers using the competitive forces of the marketplace rather than lengthy and resource consuming negotiations to ensure the price was fair and reasonable.

The Navy has led the way in using marketplace forces to reduce or eliminate overly restrictive regulations and unnecessary audits. The competitive marketplace has repeatedly proven itself to be the best regulator. To provide industry with earlier notice of competitive opportunities, the Navy published its first market research guide this year and is currently distributing its second edition. Moreover, increasing the opportunity for businesses to sell to the government has the healthy effect of motivating manufacturers to innovate. Contractors respond with new manufacturing processes which save time while cutting costs.

Acquisition Management

The Navy entered into fixed-price development contracts for several major systems in FY 1988. These contracts included the Advanced Tactical Aircraft (A-12), Advanced Submarine Combat Control and Acoustic System (AN/BSY-2), HARM Low Cost Seeker, Advanced Airborne Expendable Decoy (AAED), Remotely Piloted Vehicle (RPV), Missile Detector Buffer Box (MDBB), and the Combat Control System MK-2 (CCS MK-2). The success of this type of contract depends on risk reduction prior to full scale engineering development. We will continue such a course on programs where the risks are consistent with fixed-price arrangements.

We coordinate closely with industry as we formulate acquisition strategies and streamline specifications and data requirements. In Navy RPV acquisition, for example, we solicited comments from industry in formulating the acquisition strategy and defining a NATO RPV for a maritime mission. We awarded a competitive phase to conduct a comparative analysis and to consolidate mid-range RPV target requirements. Also, in the A-12 program, we decreased the number of required military standards and specifications from 2200 to 540, tailored data requirements to contractor formats, and accepted required reports and data on computer software rather than on paper.

Success in project management depends on flexibility in applying sound business strategies to specific procurements. On the Advanced Air-to-Air Missile program, for example, we changed the plan for the demonstration/validation contract from "fixed-price" to "cost-type", since the risks involved had not yet been reduced sufficiently. In the Tactical Air Operations Module program, we selected a subcontractor competition instead of a leader-follower arrangement for greater savings. The extent of the subcontracted competition was negotiated up-front and included in the prime contract award.

The Navy continues to work toward restoring the authority of Program Managers. This means making use of the Packard Commission findings by reducing bureacratic layers, streamlining, showing flexibility, and enforcing accountability. Currently, by far, the overwhelming problem for Program Managers is the production of documents and reports. The majority of major acquisition documents and reports are required by law and contain many overlapping data elements. Among 22 of the most common DoD-wide reports, 13 are directly rooted in various sections of Title 10 U. S. Code, and three more are required by the Federal Acquisition Regulations, OMB Circular, or equivalent authority. There is limited potential, therefore, for the Navy or even DOD to provide major administrative relief for our Program Managers without help from Congress.

Total Quality Management

Total Quality Management is a customer-oriented, quality-focused management practice, paralleling the actions of successful private companies. Our goal is to surpass the President's 1986 challenge to increase productivity 20 percent by 1992. We are streamlining acquisition to reduce procurement lead times and eliminate unnecessary requirements. During the past year, over 135 programs were reviewed this way, resulting in more than $3 billion in savings and cost avoidance. Examples include FY 1988 savings of $111 million for the AH-1 Night Targeting System (NTS), and estimated cost avoidances of over $1 billion for the A-12 program.

CONCLUSION

Working together, Congress and the Executive Branch have revitalized the Fleet and Fleet Marine Forces. Deficit reduction measures, while necessary for the health of our economy, must also take into account the absolute necessity to provide for America's security. As we decide how to structure our defense for the future, we should consider the flexibility and deterrent value of each purchase. We should favor those which will have an enduring capacity to respond to the widest variety of contingencies, especially those which are the likeliest. Our ability to concentrate powerful sea-based deterrents quickly in response to emergent crises, and to redeploy them just as quickly, means that naval forces will remain the primary means to undergird American foreign policy for the foreseeable future.

A trained and ready Fleet will support a maritime coalition and the proven strategy of deterrence and forward defense. We have that Fleet today, manned by volunteer professional Sailors and Marines willing to make the sacrifices necessary for our national security objectives. They look to us to support their families, their training, and to provide the best equipment in the ships and aircraft which we ask them to man. The budget before you will meet our responsibilities to these young Americans. The budget reflects a plan which is balanced and reasonable. It is affordable and worthy of your support.

BIOGRAPHY OF H. LAWRENCE GARRETT, III

On 13 April 1989, President Bush nominated H. Lawrence Garrett, III, to be the Secretary of the Navy. Mr. Garrett was confirmed by the Senate on 12 May 1989 and took the oath of office on 15 May 1989, becoming the 68th Secretary of the Navy.

Mr. Garrett was born 24 June 1939 in Washington, D. C., and was raised in Miami, Florida. He enlisted in the United States Navy in October 1961 and subsequently qualified in submarines as a machinist mate. Mr. Garrett was commissioned in April 1964 upon completion of flight training, serving as a Naval Flight Officer aboard maritime patrol aircraft. Subsequently, he completed operational tours in VP-50 including deployments in Vietnam.

In 1972, he transferred to the Judge Advocate General's Corps, where he rose to the rank of Commander. He served from 1974 to 1978 as Force Judge Advocate/Legal Advisor to the Commander, Submarine Force, U. S. Pacific Fleet, Pearl Harbor, Hawaii. In January 1979, while serving in the Office of Civil Law in the Washington, D. C., Office of the JAG, He was detailed to assist in developing the Federal regulations pertaining to the Ethics in Government Act of 1978. In February 1981, he was detailed to the White House as Assistant Counsel in the Office of Counsel to the President. He retired from the Navy in 1981.

Subsequently, Mr. Garrett was Executive Assistant to the President and Chief Operating Officer of the U. S. Synthetic Fuels Corporation. In 1983 he returned to the White House as Associate Counsel to the President of the United States. Mr. Garrett served as General Counsel of the Department of Defense from February 1986 to August 1987. Prior to his appointment as Secretary, Mr. Garrett served as Under Secretary of the Navy from 6 August 1987.

Mr. Garrett earned a B.S. degree in Business Management from the University of West Florida in Pensacola, and received his J.D. degree from the University of San Diego School of Law, San Diego, California, graduating cum laude. A member of the California and District of Columbia Bars, he is licensed to practice before the United States Supreme Court, the Supreme Court of California, the District of Columbia Court of Appeals, U.S. Court of Military Appeals, and the U.S. District Court for the Southern District of California.

Mr. Garrett is married to the former Marilyn K. Bender of San Diego. They reside in Oakton, Virginia. They have two children, H. Lawrence Garrett, IV and Mrs. Juliana Relihan.

OPENING REMARKS OF ADM. C.A.H. TROST

Admiral Trost. Mr. Chairman, I, too, would ask that my formal statement be provided for the record. I will confine my opening comments, with your concurrence, only to amplify several of the points that both you and Secretary Garrett have made in your opening statements.

First of all, I, too, would emphasize the current state of readiness of our Navy and Marine Corps forces, as has been demonstrated repeatedly as they have been challenged in meeting their duties throughout the world in this past year.

Having said that, I am, of course, concerned, as all of us are, by the reduced support for the necessary funding to carry out the requirements that we feel are necessary in meeting our duties. We will, because of force structure reductions, be forced to meet some of our commitments with fewer forces and, more importantly, with less flexibility than we have in the past. That will be a fact of life.

We are heartened by the strong support of the Secretary of Defense for our ongoing program of maintaining deployments at a level no higher than 6 months in duration and with adequate turnaround ratio in between deployments so that we do not drive our well-trained, highly-capable people out of the Navy because they find themselves deployed on a back-to-back basis.

We have had to take cuts. Secretary Garrett has already indicated the priorities that we are attempting to maintain, and we will do our best to do so. We face a tremendous challenge with reduced budgetary levels, knowing that our Navy and Marine Corps team will continue to be called upon repeatedly and often with short notice to carry out support of U.S. commitments around the world.

PREPARED STATEMENT

We are prepared to do our best to meet that challenge and in the meantime to do our best to ensure that we maintain the level of readiness that is necessary to carry out those commitments.

Thank you, sir.

Senator Inouye. Thank you, Admiral.

[The statement follows:]

STATEMENT OF ADM. C.A.H. TROST

CHIEF OF NAVAL OPERATIONS

ON THE POSTURE AND FISCAL YEAR 1990 BUDGET

OF THE UNITED STATES NAVY

FY - 90 Posture Statement

Before beginning my formal posture statement, I would like to call your attention to a vivid and evocative videotape we have produced to give the Members of the 101st Congress a first-hand look at our Navy operating today at sea. A copy has been provided directly to your offices, and I would encourage each of you to spend a few minutes viewing this visual presentation of the Navy's role on the front lines of national policy support and execution. I further encourage all of you to come visit the Navy at sea during this important year, to see for yourselves the matchless professionalism, total dedication, and superb performance of our Navy men and women.

State of the Navy

Our Navy has never been more ready to support U.S. national policy throughout the world. Over the past year, our forward deployed naval forces have provided a strong deterrent and made significant contributions to successful execution of U.S. security policy in the Persian Gulf as well as in every ocean of the world. Thanks to continued Congressional support, we have built the right kind of Navy. We have the right ships and the right aircraft to fight and win at sea and move personnel and equipment ashore where and when necessary. We want to continue the excellent working relationship we enjoyed with the 100th Congress and provide the balanced support necessary to meet the naval requirements of a maritime nation that is the leader of the free world.

Today, our powerful Carrier Battle Groups are the centerpiece of conventional deterrence for our forward deployed Navy. Aircraft carriers are capable of employing the full range of combat aircraft to provide air superiority for the accompanying surface combatants, allowing us to provide significant sustainable offensive combat power in support of U.S. interests around the globe. I want to emphasize that it is the extensive capability and adaptability of our embarked carrier air wings, unique in the world, that makes the large deck carrier the preferred weapon system whenever our national interests are at risk. More than any other investment in overall national security, our carriers have repaid their full value to this country in real world impact as well as continuing conventional deterrent capability.

The Navy's contribution to strategic nuclear deterrence, in the form of the Trident/D5 system, will provide the most cost-effective and survivable element of the triad forming our nation's nuclear deterrent force.

We have also made great improvements in the Navy's Strategic Sealift programs. Since 1980, the Navy has expended $6.9 billion on new ship construction and conversion, including fast sealift ships, expansion of the Ready Reserve Force, Maritime and Afloat Prepositioning Ship programs, hospital and aviation logistics ships, and the sealift enhancement program of seasheds and container ship cargo stowage adapters.

The budget submit will enable us to meet the challenges we face today and those which we estimate we will have to contend with in the future. But, associated reductions in force structure diminish the Navy's operational flexibility and impact our ability to meet commitments and respond to contingencies with adequate force. That said, I will also address in broad terms my views on the Navy's readiness after the recent round of budget cuts.

Finally, it is important to remember that the Navy faces an unforgiving and inherently dangerous environment at sea. Despite uncompromising attention to safety standards and exhaustive training, the dangers are always present; and despite our best efforts, accidents do happen. You can be assured that when lessons learned from recent events are formulated, they will, as we have done in the past, be promptly incorporated into equipment design, maintenance, and operating procedures. In asking our sailors to accept these risks, we must remain mindful of the level of personal sacrifice and potential danger these superb young men and women accept. In the final analysis, they are the State of the Navy -- proud, patriotic, and courageous.

Reality of Soviet Power

Despite the hopeful signs of unilateral force reductions and changes within the Soviet Union, we cannot ignore the realities of Soviet Power. We must not allow ourselves to be lulled into complacency by Glasnost and Perestroika, initiatives undertaken by Secretary Gorbachev to rejuvenate a deteriorating Soviet economy. While he faces tremendous odds, we take seriously his determination to succeed. We are also well aware that if he is successful, the military potential of the Soviet Union could be even greater than it is today. I applaud his commitment to pursue a further relaxation of tensions. In the meantime, we must be careful not to mistake the promise of change with reality, or stated intentions with capabilities. It would be a mistake to shape our defense on the latest pronouncement, enticing proposal, or carefully staged media opportunity.

What are the realities? Since 1981, the Soviets have put to sea six new classes of general purpose submarines, four new classes of surface warships, and three new types of naval aircraft. Today, they are building new large deck aircraft carriers (the **Tblisi**-class, at 65,000 tons is roughly comparable to our **Midway**-class) and sufficient surface combatants to eventually allow them to take modern tactical aircraft to sea. This new capability will be in addition to their four **Kiev** class carriers already fully operational at sea. Despite all the publicity about Soviet force reductions, the observable facts are that Soviet naval modernization continues unabated while they merely remove old and non-cost effective units from their inventory.

Over the past several years, under Secretary Gorbachev's leadership, we have heard a wide variety of arms control proposals from the Soviets. Extension of these proposals into naval arms control could have serious consequences. First, such efforts could jeopardize our ability to exercise sea control, maintain the sea lines of communication, and to resupply Europe in the event of war. And second, they could reduce the defense burden on the Soviets by weakening our ability to use our competitive advantage -- the mobility, flexibility and power projection capabilities of our naval forces -- in defense of allies, such as Norway, Greece, Turkey, Japan, and Korea, located proximate to the Soviet Union. Naval arms limitations could make our ability to fulfill commitments to the defense of these "flank allies" less credible.

I am particularly mindful of Soviet submarine capabilities and the threat they pose to our ability to support our interests and allies overseas. Thus our own antisubmarine warfare efforts remain my top warfighting priority. The new **SSN-21 Seawolf** attack submarines and the Long Range Air ASW Capability Aircraft (**LRAACA**) are the essential next generation of ASW forces. ASW is a force structure intensive problem. There are no silver bullets or easy pat answers to ASW. Nor is there a technical breakthrough on the horizon to make ASW simple. The combined efforts of all our ASW forces -- surveillance systems, attack submarines, ASW aircraft and helicopters, and surface combatants -- are needed to defeat a large submarine threat. To succeed at ASW you have to do it the old fashioned way; work hard, keep the pressure on enemy submarines in their home waters, and combine all the forces at your disposal. Numbers and capability make the difference in ASW -- a lesson we learned in World War II that remains valid today.

Strategic Linkages

With respect to the key linkages between our national security strategy, our operational requirements, and the Navy's authorization request, our national security interests require the use or control of the oceans and seas that separate us from Europe, Asia, and South America, as well as two of our own states. As a maritime nation and the leader of the free world we must maintain sufficient naval forces to ensure conventional deterrence, forward defense, and alliance solidarity.

In addition to the insistent reality of Soviet power, we face a growing challenge in the Third World, where various countries and groups are fully prepared to undertake unacceptable acts inimical to U.S. objectives and interests, including terrorism, interdiction of vital imports, or attacks on allies. Proliferation of advanced technology weapons, reduced availability of overseas bases, and the increased threat of terrorist activities will likely place added demands on U.S.

naval forces in support of U.S. national interests in responding to such unacceptable acts in the global periphery.

In the Pacific we are committed by treaty to the territorial integrity of Japan and by another agreement to peace and stability on the Korean peninsula. As a member of the North Atlantic Alliance, the United States is pledged to defend the Atlantic and Mediterranean. Throughout Southeast Asia, the Persian Gulf and the Indian Ocean, we are committed to ensuring the stability necessary for free access to raw materials and commerce.

These broad national security interests define the global scope of our national security strategy which depends on a commitment to maritime superiority. While the near term prospect of global war is low, we must be mindful of situations that could create superpower tensions. Regional instability is a circumstance of particular concern. As I have heard in many countries and regions around the world including; China, Korea, Japan, India, Pakistan, the Gulf States and South America, our forward deployed battlegroups are seen as the forces that maintain regional stability. Our regional presence stands as a strong deterrent against the commission and execution of unacceptable acts in many regional scenarios. The evidence is clear; a credible forward deployed naval presence is essential to regional stability -- for our allies, as well as to ensure our continued access to foreign sources of supply.

Ability to Satisfy CINC Requirements

A 600 ship force level remains the right size Navy to execute the maritime element of the national strategy with likely assurance of success. Force structure goals must relate to the estimate of our ability to prevail in conflict, and approximately 600 ships represents the collective requirements of the maritime CINCs to meet their commitments with an acceptable degree of risk.

I recognize that achieving a force level of 600 ships will not occur in the near term because of other national fiscal priorities. Although budget reductions driven by the federal deficit have prevented us from obtaining these force levels, only the possibility of a less threatening Soviet Union makes this delay acceptable. We must ensure that their words are matched by actions.

The decision to early retire Coral Sea (CV-43) and equivalent supporting combatant force levels when **Abraham Lincoln** (CV-72) is commissioned will maintain our deployable carrier battle forces at today's level of fourteen. This means we will continue to experience a shortfall in satisfying our existing overseas commitments in the Mediterranean and Indian Ocean. Secretary Cheney has stated up front that we will not attempt to do more with less. The United States Navy, our sailors and their families deeply appreciate his commitment to our policy of a minimum of one year in home waters between six month overseas deployments. Continuation of this policy is essential to ensure that our sailors and their families do not pay the price with increased separations and longer deployments for not having achieved our minimum carrier force level goal.

Further, with the early retirement of 33 antiair warfare capable surface combatants (DDG-2/DDG-37 classes) and the transfer of 24 ASW combatants (FF-1052 class) to the reserve force, the number of surface combatants per battle group will decrease. That means that today's battle groups will deploy with fewer surface combatants and will be less capable than I and our combatant commanders would like under most regional theater scenarios we face.

In the event of a contingency or other national requirement to employ naval forces, those deployed battle groups may require augmentation by unscheduled deployments of CONUS based surface combatants. The burden of unscheduled deployments falls not just on the ships, but on the men and women who man them and the families who support them. Ensuring that our outstanding Navy men and women do not become overextended at sea is a priority on which Secretary Cheney, Admiral Crowe, Secretary Garrett and I are in complete agreement.

Assessment

Implementing these force level decisions will result in fewer deployable surface combatants available for tasking, either in company with carrier battle groups or individually in places like the Persian Gulf or in the Caribbean in response to drug interdiction taskings, until the **Arleigh Burke** (DDG-51) class begins to accumulate in sufficient numbers, about 1995. In the intervening time, the Navy will be there -- but with a diminished margin of flexibility, when viewed against the real world high technology threat. In that regard, the proliferation of capable tactical aircraft, cruise missiles and diesel submarines throughout the world, often in proximity to regional "hot spots," will still require us to meet the threat with sufficient force levels to prevail in any engagement.

While I have understandable reservations about the size of our force level cuts, a sustained reduction in tension between the superpowers should permit us to make prudent adjustments in our deployment schedules and to undertake a level of risk which we might otherwise have found unacceptable. But let me offer this cautionary observation. Essential to this process is the national commitment to deliver the increased combatant capabilities of the Arleigh Burke class DDGs and downstream CVNs on schedule.

It is within this same context that I view this budget's reduced aircraft procurement to 140 in FY 90 and 193 in FY 91. As you know, the budget terminated F-14D new construction; reduced F/A-18 by 6 per year; added to the CH-53E program; terminated V-22; eliminated FY 90 SH-60F purchases; and dropped 24 T-45 aircraft from both FY 90 and FY 91. It will also early retire 73 older P-3A/B aircraft. To meet VP ASW deployment requirements and maintain operational squadron integrity we will compensate for this reduction in number of aircraft by reducing the number of P-3s in the active squadrons from 9 to 8 and in the reserve squadrons from 9 to 6; or reduce the number of reserve squadrons to ensure that each squadron is of sufficient size to meet realistic requirements.

We are currently maintaining a force mix of 13 active and 2 reserve tactical air wings, with 24 active and 13 reserve ASW patrol squadrons. These budget actions increase the significance of keeping the A-12 and the Long Range Air ASW Capability Aircraft (LRAACA) on schedule.

Similarly, the decision to eliminate one of the final Los Angeles class nuclear attack submarines and close out procurement of this superb multi-mission warship with a total of 62 purchased means that the SSN-21 program must be kept on track.

On balance, however, it is important to say that the United States Navy remains, after these cuts, a most capable smaller force. These changes are not insignificant and will require substantial adjustments to the deployed force levels and number of commitments that can be routinely met. We have made a sober assessment of where we are going and what steps we must take to get there. The Navy program remains in balance.

Future Priorities

To prepare us to meet the future, I have three overarching priorities that pervade all other issues:

First, our people: They clearly make the difference and the quality of our people will provide the winning margin in any conflict. We need to be able to continue to attract and retain the enthusiastic, patriotic, bright, and incredibly hard working men and women that are the Navy of today. In this regard, we appreciate the support by the 100th Congress on many of the issues affecting our people and look forward to continued efforts to ensure a decent quality of life for our sailors. Our people accept an arduous life style, make tremendous sacrifices, work long hours, and ask for very little in return. Today, despite the recent pay increase, the disparity between the Employment Cost Index and military pay stands at 10.1 percent. I urge this Congress to recognize and seek to close this gap, and provide support to programs to reduce the drastic shortages of affordable military housing, and improve access to quality medical care, as well as continue to meet the need for morale, welfare, and recreation enhancements that communicate in a visible way our commitment to the quality of life of our people.

Second, maintaining a balanced and effective naval warfighting capability: Since World War II, Naval forces have been a principal instrument of our crisis response in 80 percent of over two hundred separate incidents. We are called first and deploy the farthest -- and in today's environment of weapons proliferation, we can expect to face sophisticated, well-equipped opposition even in Third World scenarios. Maintaining the balanced capability required to respond and win in a wide variety of demanding potential scenarios is my overarching priority. This means having a Navy that is properly manned and equipped to win across the spectrum from low intensity conflict to a global war --should deterrence fail. It also means having a Navy that is flexible enough with sufficient force levels to achieve our national objectives as a maritime power and leader of the free world, depending as we do on sea lines of communication for the quality of life of our people and freedom itself.

Third, achieving required future capability: We must look to the future as we allocate resources today, wisely planting the seedcorn of research, development, test and evaluation. This will include incorporating key advances in advanced antisubmarine warfare technologies, low-observability, electric drive propulsion, command and control systems, long range cruise missiles, and space systems.

In closing, I would like to highlight the role of the United States as the leader of a global maritime coalition, a group of free nations linked by our common belief in freedom of the seas, a dependence on sea lines of communication, and a shared requirement for maritime defense. In this era of increased emphasis on burden-sharing, it is important to note the contributions many of our allies and friends who form this maritime coalition make to our mutual security interests. Through mutual security efforts undertaken with our coalition partners, the U.S. Navy is able to maintain a forward deployed presence that makes a significant contribution to stability in many regions of unrest. As we saw in the Persian Gulf, U.S. leadership is often the catalyst that draws our allies and friends into supporting roles during crisis. This fundamental role, providing leadership and peace through strength, is at the heart of our Navy's mission today and in the future. My assessment is that today we are good -- ready to fight and win at sea. It is a fact of life that our Navy will continue to be the force of choice in the real world. With your support, we will be ready when called upon to serve our national interest on distant seas wherever and whenever required.

The Need for Maritime Power

The United States has been and always will be tied to the sea. Our geopolitical position is that of an island nation, blessed on our land borders by fraternal neighbors but linked to the rest of the world through multiple overseas alliances and trade routes. We have spent the greater part of our nation's history looking at the oceans as a buffer, protected from direct threat by a continental land power; yet we are inextricably linked by trade, alliance, friendship, and threat to the rest of the globe --a situation which unequivocally requires forceful, intelligent use of the seas.

Sea power is at the heart of our ability to influence international events by virtue of U.S. politics, economics, strategy, and culture. Since the end of the Second World War, we have been deeply involved in a system of multiple alliances stretching across the seas. As the leader of this global maritime coalition, our nation must operate fleets capable of sailing in strength on every ocean. Sea power enables us to bring mobile, flexible forces to bear during international crises, and helps to form the bond that holds our maritime coalition of free nations together. We are bound similarly to the seas by our involvement in a complex and interdependent global economy. Petroleum, strategic minerals, high-technology imports, and many other vital products and raw materials must come to us via sea lines of communication.

As a part of this global economy, our markets and a significant portion of our industrial base are moving overseas. U.S. trade during this decade has increased dramatically, from 482 billion dollars in 1980, to 776 billion dollars in 1988. It is worth pointing out that the overwhelming majority of this vital trade, nearly all goods -- export and import -- was carried aboard surface ships. However, U.S. flag merchant vessels carried less than five percent of our foreign commerce.

This expanded global network of overseas interests underscores the unacceptability of constraint of trade, through terrorism, conflict or impending crisis and highlights our economic interdependence with the world's trading centers -- links dependent on the sea.

From this strategic standpoint, sea power is the necessary foundation to protect our global interests and execute our national strategy. Maritime superiority is the essential prerequisite to the successful defense of our country, our allies, and our vital interests. Control of the sea allows us to execute forward, offensive operations in defense of Western Europe and in the Pacific, in conjunction with our allies and friends as necessary. Finally, there is a strong and enduring cultural element in our requirement for sea power. Our Navy is a symbol of U.S. involvement in the global arena.

In the global arena there are forces that represent political, economic and military challenges to us. The Soviet Union, a state espousing values antithetical to our own, continues to represent a clear security challenge to our nation. Additionally, a number of individual states in the Third World are capable of creating turmoil and international instability on a regional basis in ways that directly threaten U.S. citizens, property, and interests. Finally, terrorism, state-sponsored or otherwise, remains a plague upon our times, and moreover, given the spread of religious and social unrest in so many strife-torn areas, one that is unlikely to recede.

In meeting these challenges, we have developed a national security strategy built solidly on three enduring premises:

Deterrence: We must maintain the military capability to deter our enemies from either attacking us militarily or attempting to undermine our global position. Such deterrence is operative at every step along the ladder of conflict, and includes both conventional and nuclear components.

In particular, the Navy's contribution to strategic nuclear deterrence at the upper end of the ladder of conflict is worth highlighting. We provide nearly 50 percent of the nation's strategic warheads for only 25 percent of the total strategic cost. In any potential post-START strategic arrangement, the potent Trident/D5 system is likely to remain the most cost-effective and survivable element of the nation's strategic deterrent.

At the conventional level, the general purpose naval and strategic sealift forces provide a day-to-day deterrent of great impact. Our Navy, ready, mobile, and flexible, is capable of applying force throughout the globe. Would-be aggressors against U.S. citizens or property anywhere in the world are recent examples of the reach and impact of naval power -- the Libya strike, Achille Lauro capture, and Grenada rescue operations among others. In the face of such retribution, many potential attackers have refrained from striking either directly or indirectly against U.S. interests.

Strong Alliances: Our national security strategy is predicated upon an enduring alliance system that has remained largely intact since the end of the Second World War. Our NATO, Pacific, and Rio alliances, and many existing bilateral agreements, are based on the mutual interests of the signatories, and often represent an effective division of labor between allies. Many of our allies operate professional navies, and often contribute in many demanding scenarios -- recent escort and minesweeping operations in the Persian Gulf are examples. Our Navy-to-Navy contacts help to ensure that the United States will remain at the forefront of a global, free-world coalition of nations dedicated to the furtherance of peace.

Over the coming decades, although there may be shifts in relative responsibility or level of effort, we will remain the leader of this global alliance. As a result, the future cohesion of this partnership will depend on our management of burden-sharing. We must use burden-sharing to strengthen our alliances, not as an excuse to reduce defense budgets. As the Secretary of Defense recently commented, there is no question that America's allies should strive to shoulder more of the burden of their security and the security of allied interests outside their borders. In many instances, we see superb cooperation and assistance from our sister navies in allied countries. Our NATO and Korean allies provide Strategic Sealift for their own mutual support. The efforts of the European Navies in the Persian Gulf and the Japanese military capability improvements in the Pacific are examples of the positive cooperation within this maritime coalition. A further example, linked to budgetary concerns, is the cooperative procurement of a variety of maritime warfighting systems, including the NATO AAW program, a joint effort among six NATO partners to improve alliance AAW capability through combat system design.

One final aspect of our global maritime leadership is the role of the United States in improving the naval capability of our allies, many of whom are badly in need of our assistance to maintain a viable combat capability. In this regard, we must provide realistic levels of security assistance and military education and training to our friends. We are woefully behind the Soviets in this area. We must work to improve naval assistance to such other friends and allies as Pakistan, South Korea, Greece, Turkey, Portugal, Argentina, Brazil, Chile, and Peru as part of our approach to coalition warfare against any potential adversary.

Forward Operations: The basis of our national strategy is to deter and, if necessary, defeat the enemy as far forward as possible. This means first deterring any potential aggressor with on-scene forces and, if required, fighting in the enemy's waters and on his shores rather than our own. To this end, we deploy U.S. military forces overseas on bases in allied nations and at sea in forward positions during peacetime. This gives us the flexibility to contain a crisis early -- when it counts. Naval forces, in particular, have proven to be best employed by seeking out and engaging the enemy in offensive operations where we seize and hold the initiative. It is the inherent flexibility and mobility of naval battle forces that has permitted the United States to react promptly and effectively to regional disturbances affecting our national interests.

In this context, the maritime component of the U.S. national military strategy is not a war plan or a go-it-alone timetable of warfighting operations, nor is it a justification for force structure. It is a fundamental supporting element of the overall national military strategy, and as such represents a concept of operations for the effective global employment of maritime forces as a deterrent force or in the event of combat.

Recent discussions have addressed possible competitive strategies to align enduring U.S. strengths against enduring Soviet weaknesses in a point-counterpoint sequence, seeking to exploit areas of potential high leverage, and permitting a focus on the most effective use of our resources. The U.S. Navy today brings traditional naval strengths to bear against both Soviet and Third World adversaries where they are the weakest by exercising sea control; executing power projection with tactical air strikes, cruise missiles, and expeditionary forces; and providing the necessary sealift to project the appropriate force mix at the right time. The use of naval forces is in itself a competitive strategy in being that has been proven over time. We are likewise pursuing specific technological initiatives that fulfill the concept of competitive strategies, including stealth and counter-stealth systems, long range, highly accurate cruise missiles, and advanced avionics in our aircraft. The employment of mobile, flexible naval forces equipped with advanced weapons is an effective competitive strategy. The Navy-Marine Corps Team brings to the Competitive Strategy Concept mobile, elusive, and technologically superior forces capable of exploiting enemy weaknesses swiftly.

The essential value of naval forces -- an ability to operate autonomously in areas where we have no permanent base structure

-- is unlikely to change. Naval forces are capable of suddenly appearing on the horizon of most countries of the world, signaling presence and power, then withdrawing beyond the horizon at any time without sounding retreat. They are capable of applying force with extreme precision or overwhelming firepower. As we saw in the Persian Gulf, those qualities are ideal in a politically constrained environment. This very flexibility and mobility can be maintained notwithstanding constrained access to our bases overseas, or in the absence or partial absence of complex logistic support, or without permission from reticent third party states. Forward deployed forces can overcome the problems of time and distance, reducing response times to acceptable levels and remain on station for as long as required. Such attributes are unique to naval forces.

Future Security Environment

The international security environment of the coming decades will present the United States with significant opportunities and major challenges. As economic and political realities continue to change, we will see the codification of the shift from a bipolar to a multipolar world power balance. Japan, China, and a unified Western Europe will all exercise unique strengths to exert an increased impact on global events. At the same time, some emerging powers, such as India, might be expected to increase their economic and military power, perhaps becoming dominant regional players. In this context, several important trends -- many consistently identified in prestigious national studies such as the report on national strategy entitled Discriminate Deterrence -- are germane:

o Proliferation of advanced, high-technology weapons throughout the Third World, including biological and chemical weapons as well as tactical ballistic missiles, relatively advanced submarines, smart cruise missiles, and more sophisticated command and control systems will be a serious concern.

o Explosive population growth in several key developing countries may lead to potentially unstable domestic conditions.

o Continued threats in the global periphery from terrorism, radical developing countries, and transnational coalitions, such as drug cartels, could adversely impact U.S. interests.

o Continued access and overflight constraints limiting the use of bases, reduced from a network spread across about 100 countries at the end of World War II to under 40 today, will underscore the continued need for flexible and mobile naval forces.

o Dependency of U.S. industry on overseas centers of high technology for advanced "raw materials" (computer chips, electronics, synthetic materials) may increase.

Taken together, this future security environment portends further involvement of the U.S. Navy in protecting our national interests throughout the world. The challenge will be executing demanding tasking while maintaining sufficiently high capability to deter the Soviet Union.

Reality of Soviet Power

Despite the public discussions of "reasonable sufficiency" and the promise of reduced armaments, Soviet warfighting capability continues to grow. Evidence clearly shows that the Soviet Union is continuing to build advanced, multi-threat submarines, surface ships, and aircraft at high rates. Their production lines are turning out highly offensive, blue-water oriented platforms with superb weapon and sensor suites. Examples of recently introduced Soviet military platforms and weapons include the highly sophisticated **Akula** class nuclear attack submarine, the new **Tblisi** class large deck carrier which will be introduced to their fleet in the next few years (which, at 65,000 tons, is comparable in size to our own **Midway**-class), and the continued development of long range sea launched cruise missiles, including the SS-N-21 and SS-NX-24. In the recently published Soviet work "The Navy: Its Role, Prospects for Development and Employment," the Soviets voiced their goals for submarines that can travel at up to 100 knots submerged, dive to 6,600 feet, and fire 300 knot torpedoes -- all of which sounds more like "excessive capability" than "reasonable sufficiency."

At the same time, the Soviets continue to provide an enormous amount of foreign military sales, security assistance, and military training and education to a wide variety of client states around the world. In 1987 alone Moscow delivered $21 billion of military material to over 30 nations. One expression of the influence gained by arms shipments is the number of military advisors the Soviet Union stations in these countries. Today, there are more Soviet military advisors in Latin America (including Cuba) and Africa than the United States has throughout the world.

The insistent realities of Soviet military power will require a sustained emphasis on both our national defense and maritime superiority. Naturally, we must listen carefully and hopefully to Soviet Arms Control proposals, working from a position of strength to ease relations between our countries. We must, however, maintain vigilance and readiness while we negotiate in those areas that seem to hold promise for improved security. The simple fact is that the Soviet defense industry has not visibly slowed and that their formidable military power continues to operate throughout the world.

The Soviets may or may not be reshaping their global strategic vision. While they posture publicly with seeming benevolence, the true long-term impact of "perestroika" on the Soviet military is unclear even to experienced observers. Certainly, we have seen no lessening of the Soviet drive to obtain advanced Western technology and military plans, in order to modernize the forces they continue to bring forward at a rate that belies the image of "reasonable sufficiency" they would have us accept. We may be witnessing a shift from the politics of stalemate to the politics of maneuver between our two nations -- a period that would require particular care for us in the West.

The Soviet Union is pushing hard in propaganda and public diplomacy for some form of naval arms control that would restrict U.S. freedom of movement by the creation of naval exclusion zones and operational constraints -- what they call "zones of peace." In a variety of arms control fora, severe limitations on Sea Launched Cruise Missiles and on aircraft carriers have been proposed, indicating that these weapons systems are a major concern to the Soviets. Recent statements by both Secretary Gorbachev and Marshal Akhromeyev convey an unambiguous intention to seek naval confidence and security measures which would limit naval forces. These initiatives are not new -- both types of initiatives have been seen before -- but they have been pursued more intensely in the past two years. Such proposals are self-serving, aiming to reduce the effectiveness of both conventional and nuclear deterrents --in effect, capturing the U.S. Navy, what the Soviets refer to as "the problem."

Whatever the Soviets seek today, the long historical record of Russia is one of international expansion and internal turmoil. We must see deeds, not words, from the Soviets, and keep our trust in our strength, not their promises. The key to analyzing any military organization is a realistic examination of its military capability. Stated intentions are not meaningful when compared with the ability to inflict enormous punishment on an opponent. Such is the case with the Soviet Union today -- we must judge them coldly on the basis of their ability to harm our interests, not simply on their more reassuring statements of new defensive doctrine.

State of the Navy Today

Nothing is more critical to our ability to perform our assigned mission at sea than our Navy men and women. Without them, our advanced technology, training, tactics, and strategy will fail. Yet we are poised today at the top of a roller coaster we have ridden before; over the next few years, unless we are vigilant, the gap between the Employment Cost Index and military pay may widen while benefits our people receive will decline. Given the demographic constraints all services must face, recovery will be expensive and difficult -- as indeed it proved to be eight years ago. Today, we are fortunate to have the very best of a generation serving their nation at sea in dangerous, demanding jobs. As I look ahead, I wonder whether we will be able to continue to attract such a superb group in a potential environment of reduced pay and benefits. Good people are my top priority. With them, we can prevail at sea in any conflict.

The building programs of the past few years have improved our capability to provide forces capable of projecting forces worldwide. Despite intensive operations, readiness continues at a high level, and the recommended construction programs in the FY 90-91 budget proposal will sustain our Fleet at the level required to perform critical missions throughout the globe. This year our building program is even more critical as we encounter the projected replacement of older ship classes in an austere shipbuilding environment.

In planning for war, every Chairman of the Joint Chiefs of Staff since World War II has validated minimum risk warfighting requirements for over twenty Carrier Battle Groups, and our planned number of deployable CVBGs reflects a minimum in every sense. In both peacetime and in war, the Carrier remains the only way to take tactical aircraft to sea -- and those aircraft remain the arbiter of crises control in areas of instability and of sea control on the maritime battlefield.

Our Carrier Battle Groups are the centerpiece of our naval capability, because they represent the most effective and complete way to establish and maintain control of the seas. There is no substitute for them in peacetime or in war. Sea control is an often used and under-appreciated term. It is the fundamental mission of the U.S. Navy today, and will continue to be absolutely vital to the execution of any mission at sea for the foreseeable future. In simplest terms, it is the capability to conduct extended operations at sea to engage and destroy enemy forces beneath, upon, and over the seas. It includes denial to the enemy of access routes to the sea, protection of vital sea lines of communication, and using the sea for any form of combat operations. Sea control must be earned at sea, with potent naval forces. It is our primary task.

In the violent peace since 1945, every President's first response to any international security crisis since the second world war has been the question: "Where are the Carriers?" The answer to this question has been the foundation of our forward strategy: They are where we need them -- forward deployed and battle-ready. There is simply no other investment in national security that has so often repaid its full value to this country in real-world impact as well as continuing deterrent capability.

It is worth considering that in the 1950s, the Congress made funding decisions to build USS Saratoga, which we still operate as a front line Carrier -- and which, thanks to a service life extension, will operate for another 20 years --and Wheelus Air Base in Libya, which Colonel Quadafi now operates. In the 1960s, we likewise funded both the USS John F. Kennedy and the airfields in Cam Rahn Bay and Da Nang.

In the final analysis, our Carrier Battle Groups are the nation's force of choice in peace and war. There is simply no substitute for their capabilities. When all is said and done, Carrier Battle Groups are the most cost effective and combat capable system in the U.S. inventory, and will remain the cornerstone of U.S. naval capability.

Naval Operations: 1988

The past year was marked by a tremendous diversity of demanding naval operations throughout the world, particularly in the Persian Gulf. In the demanding environment of the Gulf, the Navy was presented with an opportunity to validate our force structure in lower level conflict. The warships, weapons, sensors, and C3I systems that we have built worked well in the most demanding and realistic environment imaginable: combat. Our ships are built to fight around the world and on every rung in the ladder of escalatory violence. In the Persian Gulf, despite tactical challenges at every turn, our forces clearly helped achieve a strategic victory for the United States.

Throughout the conflict, combat systems and warfighting doctrine were used and modified by the on-scene commander as the tactical situation dictated. When new or unexpected challenges presented themselves, solutions were found using current military systems -- including integrated tactics and equipment from our sister services and allies. This is the most fundamental aspect of warfare, and demonstrates thorough preparation and a well-balanced force structure.

Indeed, the ability to change tactics and introduce different systems into a combat environment is an indication of a war-ready military. The right warships and systems were available on scene in a distant sea and were used for the task at hand in the Persian Gulf. Throughout this experience, we saw demonstrated the immeasurable value of national resolve and a professional military.

Our European allies were deeply involved in many aspects of our mission in the Persian Gulf, as were our sister services. Indeed, during 1988, the largest concentration of allied sea power since the Second World War operated in the North Arabian Sea and Persian Gulf. We successfully completed 82 convoys in 1988 without losing a single tanker; repelled a coordinated

Iranian attack in April while destroying a significant part of their surface Navy; maintained an essentially mine-free passage throughout the Gulf; captured Iranian mine-layers in the act of illegally mining international waters; and, in general, brought a measure of stability to a dangerous and turbulent corner of the world. In the final analysis, the real success was in demonstrating the credibility of U.S. foreign policy, backed up by a forward deployed and combat ready Navy. Perhaps the best evidence of this was heard night after night on the bridge-to-bridge VHF communications circuits in the region, which were filled with transmissions from civilian merchant Captains to our Navy vessels: "Thank you, American warship. Thank you."

Was the Persian Gulf a perfect success? In combat, nothing is perfect. But when problems and challenges arose, we learned our lessons and applied them well. Naval Reserve personnel from the Naval Control of Shipping units served aboard U.S. flag tankers being convoyed under U.S. Navy protection in the Persian Gulf. These specialized reservists provided guidance to ship masters and civilian shipping authorities. The damage control lessons of the **Stark** were applied by the crew of the **Samuel B. Roberts** after she struck an Iranian mine; the courage and indomitable spirit of the **Roberts'** crew, combined with new equipment and training, resulted in a remarkable performance in saving the ship. Our Military Sealift Command successfully brought the **Roberts** home for repairs. She will Soon be ready to return to the fleet. While we all deeply regret the sequence of events that resulted in **Vincennes'** missile launch against an Iranian airliner and the subsequent tragic loss of life, we are applying lessons learned in that situation to future training. In the end, your Navy was able to accomplish the missions assigned, and the success of the escort operations had a positive effect on the eventual achievement of a ceasefire under circumstances favorable to U.S. policy objectives.

In the Pacific, Navy forces were operating in a peacekeeping role off the coast of Korea during a delicate few weeks in September. While most of us were enjoying the performance of American athletes in the late-summer comfort of our homes, thousands of young sailors in the **Nimitz** and **Midway** Carrier Battle Groups were standing long, arduous watches in the hot engine rooms and on the rolling decks of Navy ships. The message was clear and the games were without incident -- another example of the far-ranging impact of Naval operations abroad. At the same time, other Navy forces were operating throughout the Pacific, participating in exercises with our allies in the Philippines, Thailand, Australia, Japan, and Malaysia. Our support ships were shuttling supplies and fuel along the extended logistics chain through the Pacific and Indian Oceans which led to our forces in the Persian Gulf. Underway, every day, your Navy ships led the way throughout the broad Pacific.

On the other side of the world, operations in the Mediterranean and Black Seas were additional examples of the deterrent effect of sea power. In a region rife with potential terrorists, Navy Carrier Battle Groups have provided deterrence with their presence and reacted with controlled application of force in defense of U.S. interests. The **Achille Lauro** and the air strikes on Libya - and most recently the downing of two Libyan fighters demonstrating hostile intent toward U.S. aircraft -- remain clear reminders to those who would undertake terrorism and irresponsible actions. Our forward presence is a constant reminder of U.S. power and resolve on station, where it belongs.

Finally, operations closer to home have increased in importance over the past few years. In addition to the 29th consecutive Unitas Exercise that brought together ships from nine Latin American Navies for over six months of extended mutual training, our Naval forces have continued to play an important part in the interdiction of drugs entering the United States. Working closely with Coast Guard detachments for actual law enforcement tasks, our ships and aircraft help in surveillance and intercept missions against unauthorized vessels seeking to illegally enter the United States. Indicative of our efforts was the announcement that **USS McCloy**, a Navy frigate, became the first "drugbusting ace" for their fifth and sixth drug seizures last August.

The Challenge of Tomorrow

Making decisions today that will shape tomorrow's Navy will be the most fundamental challenge I will face for the remainder of my tour. Critical decisions concerning people, technology, tactics, and strategy are upon us. They cannot be pushed aside. In particular, we are at a watershed in naval technology, and the decisions we make over the next several years will have a deep and lasting effect on the way we fight at sea for a generation and more.

Emphasis for the future must be on recruiting and retention of high caliber young men and women who want to serve their nation at sea on sophisticated, high-technology warships. Declining numbers of potential recruits will make our retention efforts, inextricably tied to pay, benefits, and quality of life programs, the most important single aspect of manning our Navy. At the same time, we are competing in a robust economy for a youthful labor pool predicted to shrink at least through the mid-1990s. To meet these retention and recruiting problems while maintaining the highest quality manpower possible will be our most important future challenge.

We will continue to offer new recruits and veteran sailors alike a superb working environment of unequaled challenge; an opportunity to serve their country in ways that will make them better citizens. We must continue to provide support for their families; a lifestyle of personal excellence that emphasizes physical fitness, individual growth, respect and equality, and the highest standards of ethical conduct. Those who select this path will be provided with opportunities for leadership and responsibility at an age when many of their contemporaries have not yet settled on a productive career. We have recently completed an extensive Equal Opportunity study and are actively working to ensure an equitable and impartial environment for all our naval personnel.

An area in which we received a great deal of support from the 100th Congress was in meeting our standards for both numbers and quality of Navy men and women. However, we are still suffering from shortages in certain critical technical specialties among our enlisted force -- a problem that can be helped by funding for selective reenlistment bonuses, targeted only at a critical 23 percent of our personnel. In the officer ranks, we are continuing to experience difficulty retaining several categories, including pilots, nuclear trained officers (both submarine and surface) and medical personnel. Because of intense recruiting by the airlines, which anticipate three times as many requirements for new pilots as military separations alone would fill, we have a current shortage of approximately 1500 midgrade pilots (up from 1100 last year). Likewise, we have a shortage of over 500 senior grade nuclear-trained officers who man our vital submarines and nuclear surface combatants. We will continue to work with the Congress to establish appropriate incentives to retain officers in these vital categories.

An additional issue facing our officer corps is the impact of Title IV of the Goldwater-Nichols Reorganization Act of 1986. I fully support and applaud the underlying policies and purposes of Title IV -- the enhancement of joint thinking, planning and operations, by ensuring the assignment of top quality officers to joint staffs and by requiring that our top military leadership receive joint professional military education. The implementation of its complex provisions, however, has been particularly difficult in the Navy. Although the amendments to Title IV passed by the Congress last year provided needed relief in many respects, I remain concerned about certain aspects of the law, especially the unnecessarily rigid criteria controlling joint tours and joint specialty officer (JSO) designation. Indeed, I fear that the complexities of the current Title IV approach have created an officer personnel labyrinth that removes the flexibility needed to manage our force effectively and develop the essential education and operational experience of our officers as they prepare to command forces at sea. We must remember that our strength, our real advantage over any adversary, is embedded in the ingenuity, leadership and warfighting skills of the individual American service member. For the naval officer, these traits must be developed and honed through repeated experience in the exacting environment of sea duty. Diminution in the seagoing experience and professional exposure needed to master the demanding profession of naval warfare risks sacrificing the full leverage of our greatest strength -- the trained and experienced warfare commander. Having made these observations, I want to assure you that Navy is proceeding at flank speed to fully and faithfully implement the provisions of Title IV as it now stands. As we continue to gain implementation experience, we will keep the Congress apprised of our progress.

Another concern for the future that directly impacts our people is our ability to provide quality health care. In May 1988, the Secretary of the Navy established a Department of the Navy Medical Blue Ribbon Panel, chaired by the Vice Chief of Naval Operations, to recommend actions that would improve access to Navy hospitals and clinics for all beneficiaries, reduce the dependency on the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), and revitalize Graduate Medical Education. This Blue Ribbon Panel called for increased focus on optimal use of existing Navy hospitals and clinics, assignment of top priority to Graduate Medical Education, and development of measures of effectiveness to evaluate Navy medicine. They also recommended documenting and communicating meaningful improvements in Navy medicine, pursuing cost effective solutions, and maintaining the Blue Ribbon Panel and Flag Officer Working Group to monitor the implementation of initiatives. We are also pursuing several different approaches to increasing the number of experienced active duty medical personnel. We are fully committed to recruiting and retaining the physicians, nurses, corpsmen, and other personnel needed to provide medical care to our Navy-Marine Corps family. The number of recruiters working to increase accessions in the field has been dramatically increased and the investment is beginning to pay off. With your support, we will continue to work toward our goal of providing the best health care to all our Navy beneficiaries.

In addition to the challenges facing us on the personnel side, a key element of our future warfighting capability will be the development of leading edge technology to provide our fighting forces with equipment superior to any adversary. A wide variety of exciting technologies are in the development stages today that must be properly funded to bring them to fruition. Among the most critical are antisubmarine warfare, integrated electric-drive propulsion, stealth and counter-stealth, battle management, long range cruise missiles and space systems. Taken together, our technological and industrial base, combined with our people, represent the winning edge for peace in future decades. Our ability to develop, test, and deploy advanced technology systems will remain essential to our future security requirements.

The idea that long range planning can create the strategic vision necessary to safeguard our relative advantage into the future is very much alive in the Navy's technology base. Recent studies, including the National Academy of Science's **Navy 21**, the Center for Naval Analyses' **Quo Vadis**, and my Long Range Planning Group's **Long Range Assessment** have provided a significant degree of insight and forward planning. Using these studies as benchmarks of future Navy structure, we are now generating a specific R&D strategy to move in some of the directions indicated by the studies. We have begun to issue guidance to the technology base community and our technology demonstration programs to focus on this strategic vision. In particular, I have restructured the advanced technology development program to provide more focus on the rapid transition of key technologies required for the Navy of the 21st Century.

Given the high level of capital investment associated with all naval forces, we are acutely aware of the critical need for sound, far-reaching decisions on platforms, weapons, and sensors, as well as the basic technology for research and development. As an example, the Navy is moving forward on the concept of integrated electric drive, with its associated cluster of technologies, as the method of propulsion for the next class of surface battle force combatant. This 21st Century development will provide many potential advantages, including a much smaller engineering package, greatly reduced propeller shafts, minimum crew manning, and sufficient power to provide for the operation of the next generation of sensors and weapons.

An essential ingredient in maintaining the Navy's fleet at sea is the need for a high quality, responsive shore establishment. In the FY 90 - 91 budget, priorities include new construction of housing in some high cost areas and the Trident and Strategic Homeporting programs. Over the past twenty years, we have reduced the number of our homeports commensurate with ship reductions. Now efficient management of the shore establishment dictates continued support for current homeporting initiatives. Reduced funds available for MILCON in FY 90 - 91 will necessitate even more stringent management in order to provide the excellent facilities required to maintain our readiness posture, protect our existing investments, and demonstrate our continuing commitment to improving the quality of life for our people and their families.

We have also taken steps to improve the management and effectiveness of our Ship Depot Repair Activities. A recently completed Ship Depot Maintenance Study has provided a detailed plan of action to improve our responsiveness in this area. We are exploring significant efficiencies that can be gained through improved management, accounting, training, work practices, and scheduling.

Limited resources for the technology base, research, and exploratory development are the seed corn. In times of famine or drought, there is a great temptation to eat the seed corn -- to satisfy a temporary hunger. We cannot allow that to occur. It must be planted wisely, with great attention to the challenge of providing warfighting capabilities that will permit us to prevail at sea in the dangerous maritime environment of the future.

Priorities for the Future

As I reflect not only on the state of the Navy today, but the probable future security environment as well, my priorities emerge clearly:

- **People** -- Ensuring that in an increasingly competitive market we continue to attract and retain those quality people so necessary to our continuing success, with fair pay raises, efficiently applied bonus payments to critically skilled personnel, reasonable housing allowances, adequate medical benefits, and the creation of an environment in which they and their families are cared for and secure.

- **Balanced Capability** -- Maintaining our relative advantage in ASW warfare remains my top warfighting priority. Maintaining an adequate number of deployable Carrier Battle Groups remains an enduring goal. We will also introduce the **Arleigh Burke (DDG-51)**, **Seawolf (SSN-21)**, and new carrier-based aircraft like the **Advanced Tactical Aircraft (A-12)**; maintain our strategic forces with the potent **Trident/D-5** capability; improve our connectivity through robust space and battle management systems; and strengthen our shore establishment, including Naval Shipyards and general military construction programs.

- **Future Requirements Capability** -- Developing the systems that will permit us to operate with greater self-sufficiency in an era of dwindling overseas base support and in a wide variety of warfighting environments, including stealth systems, long range cruise missiles, advanced ASW capability, battle management, logistics systems, and close-in defensive measures.

Conclusion

As we prepare to enter the final decade of this century, our national imperative for naval power will expand to meet growing challenges in an increasingly turbulent international security environment. Working together, the Navy, the Administration, and the Congress must act as good stewards of the important and vital investment our nation has made in a capable Navy. As the Secretary of Defense recently remarked, "If we look back at defense spending since 1970, we see a cyclical pattern with peaks and valleys. In the 1970s, defense spending dropped by 15 percent after taking inflation into account. During President Reagan's first term, it rose by 50 percent only then to decline by 11 percent in recent years." Only the Congress, through its ability to ensure modest, stable levels of real growth, is capable of maintaining the naval capabilities we will require in the coming decade.

Our people ask for very little. They willingly deploy throughout the world, enduring six month separations from their families and friends on a routine basis. They do so from a deep sense of commitment and love of country. We must return their commitment and devotion to duty with adequate pay and benefits, providing a secure financial environment for their families. This is a key element in protecting our national investment in a ready Navy. We must likewise provide sufficient funds to maintain a balanced naval capability, a second critical element in acting as good stewards of our country's investment. Finally, our stewardship requires investment in long term improvements that can be realized through intelligent research and development. If we can work together to provide for our dedicated people, keep our Carrier Battle Groups forward deployed and combat ready today, ensure we can project forces to meet the unified commanders' requirements, and invest in the future, we will have served well our nation's need for a strong Navy.

I am appearing before you to provide a sober, realistic assessment of the State of the Navy today. We are ready to fight. Our ability to continue to sustain this necessarily high level of combat capability and readiness depends on fiscal stability, born of a bipartisan and statesmanlike approach. I am confident that the Congress will join the Administration in protecting our investment, providing the measured real growth that will be required to keep the Navy an efficient, capable instrument of U.S. national policy well into the 21st Century.

Appendix A: Navy Budget for FY 1990 - 91

We have come to the end of what we can do to trim our budget without causing adverse effects. Our budget has been effected by what Admiral Crowe, in his testimony, called the whittling process. We have made funding reductions in crucial accounts. Looking forward over the two years of the FY 90-91 budget, we must have stable funding to maintain today's superb naval capability.

Few issues are talked about more and understood less than defense spending. A recent survey showed more than half of all Americans believe we spend more than 20 percent of our gross national product on defense. In fact, we spend little more than five percent. That is well below the levels of the 1950s and 1960s, and far below the 16 percent of GNP spent by the Soviets each year on their defenses. Moreover, U.S. defense spending, as a percent of total government spending, has likewise dropped dramatically. In 1955 it accounted for just over 50 percent of federal spending; today it is just over 25 percent. At the same time, non-defense spending has risen from just under 50 percent in 1955 to just under 75 percent today.

The recent rebuilding of our naval capability has been a procurement success for the Navy. The new, high-technology systems and platforms we brought on line in the 1980s have proved their worth in combat. They came in on or under budget, and worked right the first time. CG-47 Class AEGIS Cruisers, FFG-7 Class Frigates, Harpoon missiles, the advanced E-2C Early Warning Aircraft, F/A-18 Fighter-Attack Aircraft, recommissioned BB-61 Battleships -- to name but a few -- proved themselves in the demanding testing and evaluation environment of the real world, and were evaluated by America's foes in Grenada, Libya, and the Persian Gulf. Our systems are technically efficient, saving money through their manpower improvements: An Aegis Cruiser, for example, requires far less manning than our 1970s vintage Cruisers; and the squadron support for the F/A-18 is well below its far less capable predecessor, the A-7.

In addition to the Navy's shipbuilding, conversion and repair programs, the maritime industry benefits significantly from the Navy's sealift operations. For FY 82 - 89, the Navy will have spent more than $5 billion for charter and contract-operated ships, such as the Maritime Prepositioning Ships, Afloat Prepositioning Ships, Fast Sealift Ships as well as the Ready Reserve Force; another $4.2 billion for shipping agreement contracts for breakbulk and container services and for berth term shipments. Another $2.6 billion will be spent for the procurement of Sealift Enhancement Features and other amphibious equipment and for the operations and maintenance of contingency sealift ships. This adds to a total of approximately $12 billion over the FY 82 - 89 period for services rendered by the U.S. maritime industry.

The Strategic Sealift contingency programs were initiated by the U.S. Navy as stopgap measures to provide for national security during the decline of the U.S. flag merchant marine assets. These programs are not the final solution, nor the best solution. A healthy and viable U.S. merchant marine capable of meeting the nation's economic and military maritime requirements at all times, but particularly during national emergencies, would clearly be a more desirable solution.

One example of how we have worked hard over the past few years to be good stewards of our national investment is through the "Buy Our Spares Smart" (BOSS) Program. Since its inception in 1983, the program has successfully increased competition, reduced prices paid for spares, and helped breakout from sole source procurements. Cost avoidance through these efforts currently totals $1.7 billion, providing a program return on investment of nearly 4 to 1. The Navy Pricing Hotline, one element of the BOSS program, has received over 40,000 reports of potentially overpriced items since 1984, with over 18 percent of the cases resulting in decreased prices.

Competition in procurement has likewise provided significant savings over the past several years. The cost savings from the competitive acquisition process for the successor to the P-3C is estimated to be approximately $650 million. Since the start of true head-to-head competition for the **Tomahawk** missile in FY-85 through FY - 89, the two sources competing have lowered composite unit cost by 46 percent. Prices for **Standard** missiles were reduced through competition to levels that enabled the purchase of an additional 160 missiles (about two destroyer loadouts). Savings realized through competition on the AO-177 Jumbo Conversion Program enabled us to buy a more capable ship by modifying it to carry ammunition in addition to fuel. All of these savings have been taken into account in preparing the lean 1990 - 1991 budget.

To ensure the integrity of weapon systems acquisition, we are reflecting a change in this budget in the way we support our program management and execution process by moving effort out of contracted advisory and assistance services and into our organic acquisition commands. We believe that the present level of contract support in these areas represents an unacceptable risk to the integrity of the acquisition process. We must maintain organic resources to perform basic governmental functions, including activities of a policy-making, decision-making, or managerial nature. Our estimates reflect a realignment of funding and additional personnel in FY 89 of 238 end strength, in FY 90 of 737 end strength, and in FY 91 of 744 end strength. We will make this conversion to in-house performance at no net increase in cost.

This amended 1990 - 91 budget requests a minimal level of resources required to protect our current balanced capability and invest in future requirements. It requests a Total Obligational Authority of $89.1 Billion for FY 90 and $93.8 Billion for FY 91. It reflects my three overarching priorities: People, balanced forces, and future capabilities. The budget stresses readiness and sustainability, as it has for the past several years. The breakdown shows that vast majority of our requested obligational authority is targeted on maintaining readiness. Specifically, the FY - 90 budget is 57 percent for Readiness, 9 percent for Sustainability, 17 percent for Modernization, and 17 percent for Force Structure.

Readiness

Funding for readiness includes the costs of training, operating, and manning naval forces to fight at sea. It covers fuel, maintenance and repair for ships and aircraft, training costs, spare parts and other support items, and most importantly, military personnel costs. It is the day-to-day cost of operating an effective Navy.

As you know, people remain my highest priority. They are the ultimate force multiplier, the source of our true advantage over any potential adversary, and a perishable asset if not carefully watched over. One of the key considerations is the end-strength of our Navy. The proposed cuts in end-strength (5600 in FY 90 and 6200 in FY 91) must be made in a balanced fashion so our remaining people will not be required to spend a longer time at sea. This budget will provide adequate funding for our people account, ensuring adequate support to vital quality of life programs.

Our most serious officer shortages today are in mid-grade aviators (short approximately 1500), nuclear propulsion trained officers (short over 500), and medical designators. Pilot retention is only 29 percent, far below supportable levels. We believe part of the solution will be the Aviation Officer Continuation Pay bonus (to allow us to offset the attraction of the airlines); Nuclear Officer Incentive Pay; and targeted pay increases for our Medical department officers.

At the enlisted level, one of the most important retention tools is the Selective Reenlistment Bonus (SRB), which provides payments to highly trained, motivated skilled technicians who "sign on" for six years of additional service. On the average, each dollar invested in SRB offsets two and one half dollars in future training and replacement costs. This is a program that must have stable funding -- we will have to replace 400 highly trained technicians who departed the Navy in FY 88 while uncertainties surrounded the program -- if it is to succeed. SRB remains the most cost-effective people program we have.

In recent years, the Navy has been successful in meeting our overall enlisted recruiting goals and we are optimistic that we will continue to access the numbers that are required to support end strength. However, demographics will pose an increasing challenge for Navy recruiting over the coming decade. With civilian unemployment projected to decline to its lowest level in the history of the all-volunteer force and a 6.3 percent drop in the pool of 17-to-21 year olds 1985 - 1990, recruiters will be faced with special challenges. Recruit quality and basic education are likewise problems. A recent government report indicated that only 27 percent of young adults could interpret a lengthy feature story in a newspaper -- let alone a complex Navy training text on underwater acoustics. Our problems will be both quantitative and qualitative, and funding in this pillar will assist with both recruiting and remedial training programs that can help solve the new accession problem.

While Congress authorized a 4.1 percent pay raise commencing 1 January 1989, this will only slightly alleviate the continuing disparity between military and civilian pay as measured by the Employment Cost Index. Pay caps from FY 83 - FY 88 resulted in a disparity of over 10 percent. The FY 89 pay raise will close the gap slightly. In 1990, even with the proposed 3.6 percent increase, we will lose further ground. History indicates that without reasonable comparability between civilian and military pay, military personnel will leave the Navy, a reflection of the long periods of family separation and arduous working conditions at sea.

There are a host of other worthy programs receiving funding under this pillar. Examples of a few include the personal excellence program, which fosters excellence in education, health, fitness, and citizenship among Navy personnel and young Americans; voluntary education programs; housing allowances; child care; health and physical fitness programs; medical care; and the like. Taking housing costs as an example of the need for these kinds of vital programs, it is worth noting that of the nine most expensive cities in the country for housing, five have large Navy populations --including Los Angeles-Long Beach, San Diego, Washington DC, Honolulu, and San Francisco. All these programs are linked to quality-of-life issues which are also a vital part of our recruiting and retention efforts.

Sustainability

Sustainability includes the funds for stocks of weapons and war reserve material that form the measure of our staying power in conflict. These logistic requirements, including the ability to respond to timely demands for fuel, spares, and repair parts, are critical. They have consistently been a high priority of both Navy and unified commanders.

We have steadily invested higher levels of resources in sustainability over the past decade, and weapons stockpiles are finally approaching an acceptable level, with most of the stockpiles currently over 50 percent higher than in 1981, for example.

Our planning objectives for global war are based on the assumption that our forces will have sufficient stocks of surface-to-air missiles, air-to-air missiles, cruise missiles, torpedoes, sonobuoys, gun projectiles, small arms ammunition, and all the other weapons and supplies that ensure we do not put to sea an unprepared Navy.

We must also provide sufficient funds for our total force concept. Over the past seven years, with strong Congressional direction and support, we have increased the size of our Selected Reserve by more than 50 percent. That force now numbers over 150,000 men and women, serving in modern ships and front-line aircraft. In total capability, we have the largest, best equipped and most ready Naval Reserve since World War II. This year's budget decisions move 24 additional FF-1052 class ASW frigates and newer P-3 aircraft into the reserves. This will require examination of all reserve force issues, including incentives, recruiting, and retention.

Maintenance of the delicate balance between adequate active forces (to meet normal forward deployment and contingency operations) and reserve forces (which are normally only available under special mobilization circumstances) is at the heart of our Total Force Strategy. Suggested reserve force plans that would essentially triple the number of ships in the naval reserve are simply not supportable. The availability of sufficient manpower with proper skills within reasonable driving distance of the prospective reserve ships is a key consideration. When reserve manning falls short, active manning of reserve ships must be increased to ensure the ship does not deteriorate. This decreases cost savings and shortchanges the active force.

Five minesweepers and two frigates of the Naval Reserve Force (NRF) were in the Persian Gulf as part of the Joint Task Force Middle East in 1988. The fact that those ships were available and able to deploy on short notice validates our Naval Reserve ship programs. The likelihood that units or personnel of the Naval Reserve will be needed in future contingency operations, including low intensity conflict and drug interdiction, is very high. Our reserves can dramatically improve the Navy's warfighting capability, and are a proven, efficient, and cost-effective means of maintaining our overall readiness posture. We must ensure appropriate levels of funding are available for the reserves, and that we are able to use them where and when required in meeting potential contingencies abroad in scenarios short of total mobilization.

We continue to modernize our fleet, notably the sea-based strategic deterrent of the potent Trident/D5 submarine-launched ballistic missile which provides a high degree of accuracy for counter-force attack. The budget for FY 90 - 91 includes funds for 115 D5 missiles, which continue to have a superb operational test record. The D5 missile will have twice the accuracy of its predecessor, greater warhead yield, and twice the potential throw weight. It will provide an endurable and survivable hard target kill capability at sea.

Modernization

This complex pillar includes all Navy research, development, testing, and evaluation (RDT&E), fleet modernization or ship alterations, and aircraft and weapon modifications. Through use of these funds, we are able to cost-effectively improve current platforms and systems as well as to conduct research and development to identify the most promising avenues for future improvements. Modernization has been growing at a modest level over the past seven years, and is projected to remain stable during FY 90-91.

Our Navy technology base is at the heart of our modernization pillar, and permits us to pursue a program of basic research, exploratory development, advanced technology development testing and evaluation, and ultimate deployment. The highly successful Advanced Technology Demonstration (ATD) Initiative is being expanded as the model for efficient transition into development of the most promising and most necessary technologies. In this area, I am concerned that we work hard to improve our future capabilities with regard to anti-submarine warfare, long range cruise missiles, space and battle management systems, close-in defensive weapons, chemical/biological defenses, and stealth.

Modernized approaches to test and evaluate these weapons systems are taking advantage of many technological advancements. Fiscal shortages for upgrading our aging test and evaluation (T&E) facilities are being addressed through increased centralization of planning for T&E resources, intensified application of modern technology to existing resources, and expanded cooperation with T&E counterparts in DoD. Continued awareness of the crucial need to sustain the ongoing modernization of our T&E capabilities commensurate with the technological state of our weapons systems is critical.

Our conventional warships are also benefiting from modernization, including the addition of vertical launch capability in our **Spruance** Destroyers, the addition of towed array systems to many frigates, and upgraded hard and softkill AAW systems in many of our surface combatants. Modernization of our surface combatant force will greatly improve our overall sea control capability as these capable warships operate with carriers in both offensive and defensive roles.

Modernization funds will also improve the avionics in the current P-3 Orion aircraft, provide better torpedoes to air, surface, and submarine platforms, and integrate surface ASW systems in the SQQ-89 Integrated ASW Combat System.

Cruise missile improvements in both the short range **Harpoon** missile and the longer range **Tomahawk** anti-ship and land-attack weapons are funded from this pillar. Both are critical to the sea control and power projection missions. Advances in the **Tomahawk** support systems are expected to make this versatile weapon even more capable. Funds are included in the DOD budget for the new, longer range **Excalibur** land-attack cruise missile, the next generation of potent offensive punch that will be deployed in surface combatants, submarines, and aircraft.

Using lessons learned from both the **Stark** and **Roberts** incidents, we are continuing to improve survivability in all ship classes. Both training and hardware are being modernized in all facets of personnel protection, fire-fighting, and damage control. One system showing great utility is the Naval Firefighting Thermal Imager, which allows fire-fighters to pinpoint the flames inside a smoke-filled compartment using infrared signatures.

I am also committed to fielding operating forces who know the ocean, its characteristics and variances, and know how to use that medium more skillfully than our adversary. Our oceanography program therefore continues to grow in capability and is considered healthy and vital today. Yet, we must continue to improve the facilities, equipment, global data and oceanographic models necessary to make maximum use of oceanographic information that supports fleet operations, ultimately benefiting not only our Navy's combat capability, but benefiting our national environmental knowledge base as well.

In the critical area of antisubmarine warfare, I have worked closely with the Secretary of the Navy to put into motion organizational changes which will provide an improved focus to our efforts in ASW. The position of the Director of ASW Development has been established. This flag officer will serve as program and resource sponsor for all ASW-related exploratory development and selected advanced development activities. He will also act as the principal advisor to the Navy acquisition executive, through the Assistant Secretary of the Navy (Research, Engineering, and Systems), regarding planning and execution of all ASW-related R&D. Assisting the new director of ASW Development will be a centralized Program Manager for Advanced ASW Technology within the Naval Sea Systems Command. This Flag Officer's responsibilities will encompass overall coordination and integration of all Advanced ASW Technology developments leading to the rapid fielding of ASW components and systems. These changes, together with continued, careful husbanding and allocation of our resources, will allow us to address the rapidly evolving, quieter, Soviet submarine threat in a more coordinated manner and will centralize and streamline management of the ASW technology base.

Force Structure

Force structure includes the cost of building new ships, procuring aircraft, and converting or reactivating older ships. Difficult choices have been made to formulate the proposal this pillar represents. Consequently, this budget request represents the fusion of our effort to respond to national requirements while taking account of resource constraints.

SHIP CONSTRUCTION PROGRAM

NEW CONSTRUCTION	FY90	FY91
Trident (Ballistic Missile Submarine)	1	1
SSN-688 (Attack Submarine)	1	-
SSN-21 (Attack Submarine)	-	2
DDG-51 (Guided Missile Destroyer)	5	5
LSD-41 (CV) (Landing Ship Dock)	1	1
MHC-51 (Coastal Minehunter)	1	3
MCM-1 (Mine Countermeasures Ship)	3	-
TAGOS (Surveillance Ship)	1	-
AOE-6 (Fast Combat Support Ship)	1	1
AGOR/T-AGS (Oceanographic Ship)	3	1
LCAC (Landing Craft Air Cushion)	9	12
LHD-1 (Amphibious Assault Ship)	-	1
CONVERSIONS		
CV (Aircraft Carrier) SLEP	1	-
AO (Oiler) Conversion	1	-

As I have stated for several years, ASW remains my primary warfighting concern -- a direct reflection of the growing Soviet threat, which includes fourth generation nuclear attack submarines like the **Akula**, far closer in capability to their U.S. counterparts than we have ever encountered. At the other end of the spectrum, many Third World countries are actively seeking increased submarine capability through both diesel and nuclear submarines. We have a strong ASW program which has paced the threat and maintained an overall advantage over even the most advanced enemy systems through the years. To keep ourselves in front, we will need the advanced capability represented by a variety of ASW platforms I will discuss below. Additionally, AAW threats from high-speed, low-flying cruise missiles continue to increase, and the construction of more warships with an **Aegis** capability is my top surface combatant priority.

A key element in facing the increasingly modern Soviet submarine of the next decade is the **Seawolf** (SSN-21), a state-of-the-art advanced nuclear attack submarine. The **Seawolf** is indispensable to our ability to control the seas in the 1990s. It will be able to perform missions ranging from land-attack via its **Tomahawk/Excalibur** missiles to anti-SSBN patrol under the Arctic ice. This superb warship will be exceptionally quiet at a full range of operational speeds, carry the advanced BSY-2 combat system, and take to sea a wide range of modern offensive weapons. It will represent for the next several decades the most advanced and formidable ASW platform technology can provide.

Our Carrier Battle Groups represent the single most important aspect of our sea control capability, from which flows the Navy's ability to perform strategic sealift, power projection, and strategic deterrence. Only the large-deck CV with its own aircraft, operating in conjunction with powerful surface combatants, and associated submarine and land-based maritime patrol support, will be able to provide vital sea control in the 1990s. The only way to maintain sea control where and when necessary is to earn it with Carriers at sea operating tactical aircraft.

The unalterable reality is that our carrier forces have become the nation's mobile base structure, employed in areas vital to our interests. A second unalterable reality is that below a certain minimum a totally adequate warfighting force cannot be continuously maintained in every area of the globe where our interests and commitments require and where our land based forces cannot be sustained because of an absence of bases.

As stated earlier, the relationship between CV force levels, overseas commitments and the amount of time away from homeport is a straight-forward equation. Since deployed CV Battle Groups are manifestations of vital national interests, we must assume that these overseas requirements for deployed Battle Groups will remain. With the recent decision to early retire Coral Sea when **Abraham Lincoln** (CV-72) commissions, we will maintain our deployable CV force level at fourteen. We will continue to have a shortfall in fully meeting stated commitments.

Our Anti-Air Warfare posture at sea will continue to revolve around the superbly capable **Aegis** Cruiser and Destroyer force. The soon-to-be introduced **Arleigh Burke** (DDG-51) and the proven **Ticonderoga** (CG-47) class warships will form the backbone of the surface combatant fleet for the foreseeable future. AEGIS is quite simply the best anti-air warfare system in the world today. It is the only system in the fleet today able to cope with the full range of airborne threats.

The **Arleigh Burke** (DDG-51) class guided missile destroyer is our top surface shipbuilding priority. Its construction addresses the most serious shortfall in our force structure: AAW capable Battle Force Combatants currently at only 64 percent of goal. The **Arleigh Burke** is by far the most powerful destroyer ever to go to sea and combines the **Aegis** AAW and SQQ-89 ASW combat systems with an impressive array of weapons: vertical launch cells carrying SM-2 surface-to-air missiles, **Tomahawk** anti-ship and land-attack cruise missiles, **Harpoon**, the rapid-fire, light-weight 5"/54 caliber gun, and close-in weapons for both hard and softkill of enemy cruise missiles. The **Arleigh Burke** class also features major advancements in survivability, making it the most balanced warship ever constructed. The first ship of this class was funded in FY 85, two more were appropriated in FY 87, and five were appropriated in the FY 89 budget. We are requesting five in FY 90 and five in FY 91. To lead the threat, later ships in the class will incorporate technological advances.

Ballistic missile submarines contribute about 50 percent of the total warheads in the U.S. nuclear strategic arsenal for only 25 percent of the entire strategic budget. Trident submarines incorporate improved quieting, enhanced speed, and excellent defensive weapon system capability in carrying the D5 missile to sea. We continue to upgrade this most survivable leg of the triad in FY 90 and 91 with a request for one Trident in each year.

The Navy's shipbuilding plan also includes funds for one improved Los Angeles class nuclear attack submarines in FY 90, closing out our procurement of this class with a total of 62 purchased. This highly regarded class of submarine is a significant component of our ASW force structure, as well as being a true multi-mission warship. The SSN-688 is also a proven anti-ship and land-attack success story, and many of the class are equipped with the vertical launch system for Tomahawk cruise missiles.

As events in the Persian Gulf demonstrated in 1988, the mine remains a significant weapon in naval warfare. To ensure we are fully prepared for contingency minesweeping and minehunting operations throughout the globe, we are requesting four MHC-51 minehunters and three MCM-1 mine countermeasure ships in the FY 90-91 budget.

As the overseas logistic base structure dwindles, the mobile combat logistics force must expand and modernize. We are requesting funds for two additional AOE-6 class Fast Combat Support ships. These support vessels have the highest operating tempo of any ships in the inventory, and are truly vital to our global scope of maritime operations. These ships are floating storehouses, particularly important to the staying power of our forces in the absence of forward bases.

A class of ship that demonstrates the Navy's efficient use of ship construction funds and our ASW priority is the TAGOS class antisubmarine warfare surveillance ship. There are currently 10 TAGOS ships assigned to our Naval Fleet Auxiliary Force. The 224-foot vessels use the surveillance towed array sensor system (SURTASS) to collect and process undersea acoustic data. Manned by civilian personnel, these ships normally go to sea for 70-80 days. The TAGOS is a true procurement success story, and an improved version of this ship has been requested in the FY 90 - 91 budget.

Underpinning a strong and efficient ASW force is a well-founded understanding of the ocean. To that end, the commitment to replace obsolete ocean survey vessels with modern, multi-purpose oceanographic ships is consistent with our ASW priorities and will support mine, submarine, and surveillance missions as well. There are four oceanographic research ships in the FY 90 - 91 budget.

Aircraft Procurement

The Navy aircraft procurement appropriation request for FY 90 - 91 will be used to purchase 140 aircraft in FY 90 and 193 in FY 91. The ABS terminated F-14D new construction program; reduced F/A-18 by 6 per year; added to the CH-53E program; terminated V-22; eliminated FY 90 SH-60F buy; and dropped 24 T-45 aircraft from both FY 90 and FY 91.

AIRCRAFT PROCUREMENT PLAN

AIRCRAFT	FY 1990	FY 1991
A-12*	*	*
EA-6B (Prowler) **	-	3
AV-8B (Harrier)	24	24
F-14** (Tomcat)	6	12
F/A-18 (Hornet)	66	66
CH/MH-53E (Sea Stallion)	23	23
SH-60B (Seahawk)	6	6
SH-60F (CV ASW Helo)	-	18
LRAACA	-	-
E-2C (Hawkeye)	4	9
T-44A	5	-
T-45	-	24

* CLASSIFIED
** REMANUFACTURED

The Navy aircraft procurement plan (APN) is designed to sustain the current force mix of 13 active and 2 reserve air wings, with 24 active and 13 reserve ASW patrol squadrons. The current budget early retires 73 of the older P-3A/B aircraft. Because of deployment requirements and the need for operational integrity, we have decided to compensate for this temporary reduction in overall aircraft numbers by reducing the P-3s in the active squadrons by one and in the reserve squadrons by three; or by reducing the number of reserve squadrons to assure that each squadron is of sufficient size to meet realistic requirements. Funding for the Marine Corps' aircraft for 3 active and 1 reserve airwing is also included.

Looking first to the future, we are moving forward on the A-12 Advanced Tactical Aircraft (ATA). Our top Naval Aviation priority, it will incorporate significant stealth characteristics and become the primary striking force of our Navy Carrier Battle Groups. This vital tactical air platform will be able to penetrate even the most heavily defended enemy areas to reach its targets. The Air Force has joined us in the development of the A-12 Advanced Tactical Aircraft (ATA) and is defining an ATA variant for Air Force Procurement. Similarly, the Navy has joined the development process of the Advanced Tactical Fighter (ATF) and is defining a variant of the ATF for procurement after the turn of the century. This commitment by the Navy and Air Force recognizes the benefits of cross-service utilization of newly developed aircraft.

In the interim, we will continue to operate the long range day/night all-weather A-6 Intruder medium attack bomber, which will be modified under the System/Weapon Improvement Program (SWIP) to permit a greater stand-off capability with **HARM**, **HARPOON**, both infrared and laser **MAVERICKS**, and **SLAM** (Harpoon variant).

Complementing the A-6/A-12 medium attack aircraft will be the versatile F/A-18C Hornet, a force multiplier capable of fighter escort, interdiction, fleet air defense, and close air support. The first strike/fighter built by the United States, this aircraft features advanced avionics, low modular maintenance, and cockpit heads-up displays for the single pilot and extraordinary growth potential. Night attack/under-the-weather attack capability will be introduced beginning in FY-90. 132 of these versatile aircraft are requested in the FY 90 - 91 APN Plan.

The FY 90 - 91 budget requests funds to begin a major remanufacture effort to convert F-14A aircraft into the much improve F-14D configuration. Mounting new high performance engines, a state-of-the-art digital radar, and new digital avionics, it will pace the threat and provide outer air battle capability to the Carrier Battle Group. Remanufacture of 18 aircraft is requested in the FY 90 - 91 budget.

Following the termination of the V-22 Osprey by the FY 90 - 91 budget, we are requesting a mix of substitute helicopters to perform required missions for the Navy and Marine Corps. In particular, additional quantities of CH-53 helicopters (23 per year in FY 90 - 91) are requested.

Procurement of the two variants of the highly successful SH-60 Seahawk helicopter will continue in FY 90 -91. The SH-60B will continue to operate as a superb ASW/ASUW asset, while the Carrier-based SH-60F, with its dipping sonar, is essential to the inner-zone ASW defenses for the battle group. The dipping helo remains our best inner-zone ASW platform. Both helicopters are capable of sustained operations in high sea states from cruisers, destroyers, and frigates in the Battle Group. Eighteen SH-60Fs were deferred from the FY 90 budget pending correction of problems discovered during operational testing. We are confident that this aircraft will be a highly capable battle group ASW asset for inner-zone operations once these problems are corrected. We are also confident about its capability and remain committed to its timely procurement.

Advanced funding for the new Long Range Air ASW Capability Aircraft (LRAACA), the follow-on to replace the P-3A/B Orion aircraft reaching the end of their service lives in the mid-1990s, is included in the FY 90 - 91 budget. LRAACA will provide significantly increased payload, greater range, higher transit speed, and dramatically improved reliability, maintainability, and survivability. Equipped with the Update IV avionics system, LRAACA is our key next generation area air ASW weapon system and is a vital component of our combined arms approach to ASW operations. Procurement is scheduled to commence in FY-92.

The Navy's replacement training system for jet pilot training will be the T-45A Goshawk aircraft, operational instrument flight simulators, and training integration system. While initial procurement has been deferred from the FY 90 budget, we remain committed to the timely production of this versatile aircraft. We plan to extend the mission of this system to include the training of E-2C and C-2 aircraft pilots and naval flight officers, providing an efficient procurement of assets that will have a significant degree of commonalty with the jet pilot training system.

Funding will continue in FY 90 - 91 for upgrades to the S-3 aircraft. The resultant S-3B Viking features the most advanced airborne acoustic detection/classification system in the fleet today, the APS-137 ISAR imaging radar, and **HARPOON** missile launch capability. Additionally, the S-3B will be capable of acting as an airborne tanker. Our first operational employment of this aircraft has been very successful. This is another case of a modernization program done right.

Some S-3 aircraft will be reconfigured as ES-3As and will replace the aging EA-3B to perform the carrier based Battle Group SIGINT support mission. Fleet introduction is scheduled to commence in FY-91, with 16 aircraft available by FY-93.

This APN plan also includes funds for procurement of the AV-8B **Harrier**, the capable vertical take-off and landing aircraft used by the U.S. Marine Corps for close-air support missions. Additionally, we are requesting a number of E-2C **Hawkeye** Airborne Early Warning Aircraft to maintain sufficient fleet assets of this critical carrier aircraft.

A final thought for force structure: Beyond all the numbers and procurement plans of ships and aircraft stands a simple premise -- the size and structure of today's Navy is a product of detailed analysis by knowledgeable naval officers who will return to sea to live and, if necessary, fight with the weapons systems they have planned, designed, procured and integrated into the fleet.

BIOGRAPHY OF ADM. C.A.H. TROST

UNITED STATES NAVY
CHIEF OF NAVAL OPERATIONS

Carlisle Albert Herman Trost became the U.S. Navy's 23rd Chief of Naval Operations on June 30, 1986.

The son of the late Elmer H. and Luella (Hoffman) Trost, he was born April 24, 1930, in Valmeyer, Illinois. He attended Washington University, St. Louis, Missouri prior to entering the U.S. Naval Academy in 1949. On June 5, 1953, he was commissioned an ensign, graduating first in his class from the Naval Academy.

Following graduation, Admiral Trost first reported to the destroyer USS Robert A. Owens (DD 827) and, in December 1954, detached to attend the Submarine School, New London, Connecticut. In June 1955, he reported to the submarine USS Sirago (SS 485) where he qualified as a submariner in July 1956. From January to June 1957, he attended the Advanced Nuclear Power course at the Submarine Base, New London, Connecticut, followed by further training at the Naval Nuclear Power Training Unit, Idaho Falls, Idaho until September 1957.

In November 1957, Admiral Trost reported to the nuclear-powered attack submarine USS Swordfish (SSN 579) and in December 1959 qualified to command submarines. From January until June 1960, he studied German at the Army Language School, Monterey, California, and was then assigned temporary duty in the Bureau of Naval Personnel, Navy Department, Washington, D.C. In September 1960, he reported to the University of Freiburg, Federal Republic of Germany, serving until January 1962 when he reported as executive officer of the nuclear-powered attack submarine USS Scorpion (SSN 589).

From May to July 1963, Admiral Trost attended the Polaris Command course at the Fleet Anti-Air Training Center, Dam Neck, Virginia. He then reported as executive officer of the Blue Crew of the nuclear-powered ballistic missile submarine USS Von Steuben (SSBN 632). In March 1965, he reported as Military Assistant to the Deputy Secretary of Defense, Washington, D.C.

In January 1968, Admiral Trost assumed command of the Blue Crew of the nuclear-powered ballistic missile submarine USS Sam Rayburn (SSBN 635). In September 1969, he was assigned as Assistant Chief of Staff for Personnel and Administration on the staff of Commander Submarine Force, U.S. Atlantic Fleet. He reported in August 1970 as Executive Assistant and Naval Aide to the Under Secretary of the Navy, and later Secretary of the Navy, John W. Warner, serving until June 1973. In March 1973, his selection to flag rank was approved by the President. In June 1973, he assumed command of Submarine Flotilla One in San Diego, California, with additional duties as Commander Submarine Force Pacific Representative, West Coast.

In December 1974, Admiral Trost reported to the Bureau of Naval Personnel as the Assistant Chief for Officer Development and Distribution. In January 1976, he was assigned to the Office of the Chief of Naval Operations as Director, Systems Analysis Division. On August 22, 1978, he was promoted to vice admiral and reported as Deputy Commander in Chief, U.S. Pacific Fleet, Pearl Harbor, Hawaii.

On February 14, 1980, Admiral Trost assumed command of the U.S. Seventh Fleet where he was awarded the Government of Japan's Order of the Rising Sun (2nd Class) and the Republic of Korea's Order of National Merit.

On September 15, 1981, Admiral Trost was assigned as Director, Navy Program Planning on the staff of the Chief of Naval Operations. On October 4, 1985, he was promoted to the rank of admiral and became Commander in Chief, U.S. Atlantic Fleet and Deputy Commander in Chief, U.S. Atlantic Command.

Admiral Trost's personal awards include the Distinguished Service Medal (2); the Legion of Merit (3); the Navy Achievement Medal; the Navy Expeditionary Medal; the Navy Occupation Service Medal (European Clasp); the National Defense Service Medal with Bronze Star; the Antarctica Service Medal; the Humanitarian Service Medal; and the Sea Service Deployment Ribbon.

He is married to the former Pauline Haley of Cottage City, Maryland. Admiral and Mrs. Trost have four children: Carl Michael, Laura Lee, Steven Glenn and Kathleen Susan.

STATEMENT OF GEN. A.M. GRAY

Senator INOUYE. General Gray.

General GRAY. Mr. Chairman, distinguished members of the Committee, like my colleagues I would like to enter my formal statement into the record and I would just make a few comments.

Like all of us, we are heartened by what we see as the prospect of a reduction of tensions with the Soviet Union in respect to the focus on Europe. However, I feel compelled to say that even if we wrote the scenario and even if it was executed to the letter, your sailors and Marines, the sea services, would still be faced with a great many challenges and requirements as we prepare to steam into the next century.

We are preparing for the next century. Because the decisions that you and others here will make soon are going to shape the military forces and the military part of our power capability into the next century, I would be remiss if I did not say that I see not only a continuing demand but a growing role for the sea services, primarily because we are a maritime nation. It follows that we have to have a flexible, credible, aggregately useful sea power capability.

Within that context, last year we laid out a number of changes that we would make in the Marine Corps as we prepared for the future. They are all on track and articulated in my prepared statement. We have overhauled our operation at Quantico, developed the Warfighting Center so that we can prepare adequately with the concepts and the ideas and the testing for the future.

We have shaped our Marine Corps Research, Development and Acquisition Command consistent with the recommendations of the Packard Commission and others. We have restressed the fundamentals of warfighting as it applies to all of your Marines and sailors that serve in our command.

Yesterday, we commenced for the first time since the early 1970's the aggressive infantry training of all Marines that come into our corps. After they complete recruit training—and we have strengthened that as well by some 70 hours—and after they finish leave, all Marines who are not assigned to the infantry will receive 28 days of additional aggressive infantry training before they become logisticians, radio operators, aviation mechanics, and other noninfantry specialties.

I believe this additional training is imperative to deal with the kind of conflict that we face in the future, particularly in the Third World regions and the like where there are no more front lines.

The infantryman, the queen of battle if you will, will get that same 28 days, plus 31 more days of intensive training; upon which time he will be a basic commando. We have never trained our infantrymen as well in the basic fundamentals of their warfighting specialty, as will this intensified training program started yesterday.

What this means, of course, along with the other efforts to protect quality of life and quality of our corps of Marines, is that we have to take cuts elsewhere. One such area is in operations and maintenance. We cannot have it all, and so we are doing our best to give you the most prepared, ready combat force of Marines for tonight, tomorrow, and in the years ahead.

When I enlisted in the Marine Corps, you had to be a sergeant with 7 years of service to get married. Some years later, when I took a unit overseas for a long period of time in special operations, only 11 percent of my corporals were married. Today that figure approaches 60 percent. So for the old timers, it is a new ballgame.

Family service centers and the like are very important, as is quality of life. When Admiral Trost and others talk about sticking to 6-month deployments, this is important to the vitality of your peacetime prepared forces. Today, for example, sailors and Marines in the amphibious forces on the west coast have just come back from a grueling 6-month deployment, to include a long period at sea preparing to evacuate Americans from Burma.

Are they on their 10-day leave like everybody else in the other services? No; they are on call because of the contingencies in Central America.

So when we say we are stretched pretty thin and we are doing the best we can with our resources, we have got the facts to back it up. Your Marine Corps now has 214,000 dependents as opposed to 197,200 Marines, to keep it in perspective.

So, in quick summary, we believe that we are keeping our word and we are taking whatever the Congress will give us and giving you the kind of Marine Corps that the Nation demands. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much, General Gray.

[The statement follows:]

THE ANNUAL REPORT OF THE MARINE CORPS TO CONGRESS
BY GENERAL A. M. GRAY
COMMANDANT OF THE MARINE CORPS

Mr. Chairman, Members of the Committee,

I welcome this opportunity to present my second annual report to Congress and the Nation. I would like to point out that my report has been revised to reflect the ammended budget submission. Last year I outlined the programs we initiated in order to remain fit and ready for service. I want to share with you the highlights of those institutional changes, make you aware of the issues we face today, and give you our vision of the future.

Past Year

I was entrusted with a Corps built on a strong foundation. No Commandant has ever assumed stewardship of a Marine Corps comprised of better people or equipped with more modern arms and equipment than I. I interpreted my charter as that of building on this solid foundation, seeking ways to refine and strengthen the Corps' capabilities.

Roles & Missions

Over the past year, we've taken a hard look at ourselves and assessed the direction of the Corps. Through this effort, we reaffirmed our roles and missions. We are not only the Nation's most deployable force, but the most employable across the spectrum of conflict. Recent operations in the Persian Gulf and Panama serve as examples of our broad utility and expeditionary capability.

If this Nation faced a crisis today, Marines could go to war tonight without mobilization. We are unique in this respect. The Navy - Marine Corps team has been used in 80% of the incidents involving the United States since World War II. The Naval Service is the force of choice. Your Corps remains prepared for the most likely conflict while maintaining the capability for general war.

Institution Changes

We realized that the maintenance and improvement of our capabilities with respect to future requirements would have to be made by drawing on every available resource from within. We were challenged in this respect by last year's 2,900 man end-strength reduction. The cost to the Nation was three active infantry battalions. We now have 24 active infantry battalions vice the previous 27 infantry battalions. We recognized a window of opportunity which would allow us to make necessary change -- but we had to act quickly. We looked at the lessons learned in previous studies, concepts, and reports, and revisited old techniques that had served us well in the past. We then assembled some of our best and brightest officers, and charged them with identifying the changes needed to make the Corps better. Herein lay our formula for success in institutionalizing change. Our junior leadership generated ideas and identified the basic means to implement them, our senior leadership validated these ideas, and together we committed ourselves to their accomplishment while staying within current resource limits. We avoided the lengthy, bureaucratic staffing process that can so often stifle or kill a worthwhile concept. Within four months of inception, we formally reorganized the Marine Corps Development and Education Command at Quantico into the Marine Corps Combat Development Command, and gave this new organization a much broader charter. It is now designed to have direct interface with our Fleet Marine Forces, thus providing more effective means for meeting the needs of our operating forces. At the Marine Corps Combat Development Command, we are now better able to identify requirements, make changes to organization and doctrine, and improve our warfighting capabilities.

MCCDC

MCRDAC

Fewer than three months after a proposal emerged to effect a major reorganization of our research, development, and acquisition (RD&A), we formally activated the Marine Corps Research, Development and Acquisition Command. By consolidating our RD&A

efforts, we eliminated bureaucratic layering, and significantly streamlined our procedures. As with our Marine Corps Combat Development Command, we effected these changes with available resources. There have been some rough edges which have needed smoothing as the organizations have evolved. The important point, however, is that they are up and operating--in many ways better and more rapidly than expected.

As mentioned in last year's report, we embarked on a number of other important initiatives which have essentially dealt with how we fight and train. These initiatives are being implemented, or have already been completed. In line with the "best and brightest" technique already discussed, a study group was formed to determine the direction of the Corps in the emerging national security environment. This group determined that, while the most demanding threat to the free world would continue to be the specter of high-intensity war with the Soviets, the most likely threats to our security interests would be low-to-mid-intensity conflicts. They realized that in order to remain this Nation's premier force-in-readiness, the active force must be structured and equipped to react immediately and decisively to these threats without relying on mobilization of reserves. They also concluded that in an era of constrained budgets, the Nation could not afford to maintain large forces which had utility in limited scenarios. Forces which had ready utility across the entire spectrum of conflict provided the greatest savings.

WEI

Another study group of officers, taken predominantly from the Fleet Marine Forces, was given 45 days to analyze Fleet Marine Force structure from the bottom up. They developed a plan to strengthen our active structure in order to meet the most likely demands, while retaining within our reserve structure the capabilities needed to "heavy up" for general war. The group proposed in excess of thirty recommendations, which have been, or will be, implemented as our Warfighting Enhancement Initiatives. Specifically, these initiatives added more Marines to our infantry battalions, provided scouts to our light armored vehicle battalions to convert them to light armored infantry battalions, transferred the heavy assets needed in general war to the Reserves, and amalgamated our intelligence assets within the Marine Expeditionary Forces. Several initiatives were difficult to implement because manning and resources did not increase in either the last or present year's budget. We did, however, accomplish these changes through significant and, in some cases, painful reallocations of manpower from within our operating forces and supporting establishment. Similarly, other resources have been reprogrammed where possible. Your leaner and more operationally capable Corps cannot sustain further reductions.

Training
&
Education

We determined that acquisition streamlining and reorganization of our operating forces alone would not result in Marines being thoroughly trained and confident in their equipment. Our training had to change to meet the demands of the security environment, and our Marines had to be able to carry-out the variety of tasks they could expect to face in real-world missions. The modern battlefield subjects all Marines to an enemy threat whether in forward infantry units or in rearward logistic areas. In early 1988, we established the Marine Air-Ground Training and Education Center at Quantico, consolidating training management assets from our Washington headquarters with those in our Education Center. We expanded this new organization's responsibilities to oversee literally all training and education throughout the Marine Corps, and to interface with comparable institutions in the other Services. Beginning from the bottom up, we instituted a program of Marine Battle Skills Training to ensure that every Marine, regardless of specialty, was prepared to do what the Nation expected--fight and win. We are continuing to develop and refine other training and education programs. While new privates are learning their basic combat skills in the Schools of Infantry, officers, staff noncommissioned officers, and noncommissioned officers are polishing their professional knowledge and decision-making abilities through a program of mandated professional military education, war games, and staff exercises. We intend that Marines at every grade will become more proficient in their primary duties as warriors.

Marine Corps Planning

Marine Corps planning has undergone considerable revision and is institutionalizing our vision for the future. Significant effort is being dedicated to charting the direction of the Corps. The Marine Corps Campaign Plan will document the intent of the Corps. It outlines where it is going and why, what it will do, and how it will do it. The Marine Corps Long Range Plan will establish future goals. The Marine Air-Ground Task Force Master Plan will serve as the impetus for all planning and programming efforts. It will be the definitive statement of future Marine Air-Ground Task Force operational requirements, and will provide implementing measures in the form of doctrine, training, education, and equipment changes needed to attain the necessary capability. By clearly articulating what we will do tomorrow, we can better use our existing assets today.

Current Issues

The greatest issue that the Congress and Marine Corps jointly face is how our forces can best contribute to national security within the constraints of the budget. We have based our request to Congress on analysis of the threat and the role we will play in countering it. Our emphasis is placed on meeting the challenges of the most likely conflict, while remaining prepared for general war. We seek to give the Nation the greatest return on its investment. Our fiscal strategy has been developed to support our operational requirements frequently at the expense of other areas. The FY90/91 Marine Corps budget highlights our emphasis on force structure and resulting end-strength, making it our first priority. We have balanced our total program by slowing down modernization, reducing our support to our fixed plant, and changing the way we train. In pursuing such a strategy, a number of other issues arise which require your attention and support. We make the following issues known to you for these reasons.

Manpower

The Marine Corps is a manpower intensive organization and remains sensitive to force structure reduction. A key issue we face today is the maintenance of a quality force, built as a result of your past support. Our Marines are smarter, more mature, and less prone to disciplinary problems than at any time since the inception of the All Volunteer Force.

Our recruiting continues to provide the input needed to keep your Corps strong. Retention remains high, providing the skills and experience necessary for success on the battlefield. Unauthorized absence and desertion rates are low, which means a larger percentage of our Marines are available for training and deployment. Readiness and morale remain high because of the quality of our Marines. This is the ultimate argument for maintaining our high standards.

We will further improve training and readiness by providing a balanced flow of Marines through our training pipeline, a policy of "level-loading." Despite the near-term costs of level load accession phasing, we are fully committed to this policy for its long term gains. Assigning recruits evenly throughout the year provides a manageable flow through Marine Battle Skills Training. It facilitates planning, and results in efficient use of training assets and school quotas.

Total Force

The Corps is becoming more closely integrated as a Total Force. This integration is important to national strategy, as a constrained budget causes us to rely even more on Reserve components and civilian employees. We have merged our Manpower and Reserve Departments into one organization which will integrate planning and force management. All Marine Corps manpower assets, active and reserve, are now under single leadership. This consolidation of functions has provided for economies of scale, facilitated mobilization planning, and given us an increasingly modern Reserve force.

Marine Corps civilian employees are an integral part of our total force. They consitute 31 percent of our supporting establishment and are even more critical as a result of moving Marines from the supporting establishment to the Fleet Marine Forces. For years, civilians provided critical continuity at our bases, stations, and major headquarters. Our request for 21,659 civilians is the minimum needed to provide adequate support to the Marine Corps. The supporting establishment and our Fleet Marine Forces are presently operating at the limits of their capacity.

Our world-wide commitments require fully combat-capable units. Since end-strength reductions of the past year caused us to cadre three infantry battalions, I am opposed to any more reductions in manpower. We must maintain our end-strength; this is our top priority. If required to cut end-strength, we will maintain our Marine air-ground-logistics integrity, but we will cut vertically rather than horizontally. We will continue to provide the Nation combat ready units; end-strength reductions will only result in fewer of them.

Quality of Life

Quality of life is important to retain the high caliber of young men and women we spend so much time to recruit and train. It has a direct effect on readiness. Our ability to provide services in this respect is being challenged by the fact that over the last three years, the number of dependents has surpassed the number of active duty Marines. We have taken measures to alleviate the pressure being placed on services we provide. As an example, we are realigning units within the Southern California area. The 7th Marine Regiment and its associated combat support units are being relocated from Marine Corps Base Camp Pendleton, California where a shortfall in facilities exists, to Marine Corps Base 29 Palms, California which has sufficient facilities. These efforts are only a partial solution to the problem of supporting the growing number of dependents. Some aspects of support are beyond our capabilities.

Medical Care

As I mentioned last year, the adequacy of medical care for our Marines and their families is of continuous concern to me and to the Secretary of the Navy. There are inadequate numbers of doctors, nurses, and corpsmen. Significant delays occur in the receipt of CHAMPUS payments. Some medical practitioners no longer accept CHAMPUS for this reason. I again ask Congress to correct this critical deficiency.

Cost of Living

The high cost of living in certain areas is having an impact on the quality of life of our enlisted Marine families. In many areas, both spouses must work to meet the minimum requirements for food, clothing, and shelter. Unlike the private sector, the employment of a Marine's spouse can bring unique problems in Service life which is occasioned by family separation and instability resulting from frequent moves.

Intra Familial Relations

The pressure and the stress of Service life can manifest themselves in a variety of ways. Its worst form is family violence. All sources of family stress are of personal interest to me. This issue impacts readiness. In August of this past year, a general officers' task force was convened to examine family stress. The subject also received considerable attention in our general officers' symposium. The results of the study and the responses of general officers are currently being evaluated by my staff.

We are placing the greatest emphasis on Family Service Centers and child development centers. In FY88, over 250,000 contacts were made with Family Service Centers - a 400 percent increase since FY83. However, the ceiling on appropriated fund support to Morale, Welfare and Recreation activities inhibits providing affordable child care at an affordable cost to our Marines.

MWR

In other Morale, Welfare and Recreation (MWR) activities, we are continuing to make other significant improvements. Following congressional direction, we consolidated these activities under single management for the dual purposes of reducing administrative costs and, more importantly, seeking out innovative business ventures that our patrons would support. We have consolidated our Morale, Welfare and Recreation and Marine Corps exchange staffs into a single agency responsible for executing their programs. This effort has resulted in a more effective use of limited resources and complies with Congressional guidance. Above all, Marines are the real benefactors of this program.

Aviator Retention

Another issue of concern is the potential reduction in the retention of Marine aviators. Current, Marine pilot retention trends are lower than desired. Since 1 October 1988, a small shortfall of Marine Corps pilots has slowly developed to the point that we arenow short 139 company grade pilots. Although that only equates to about 5% of the total company grade pilot requirement, this insidious decline in the pilot inventory is cause for concern. Sufficient pilot retention in the future is questionable considering the potential impacts of aggressive hiring, and the fact that Aviation Career Incentive Pay (flight pay) has not changed since 1981. The extent of this concern has been documented in the recent DoD Aviator Retention Study.

Legislative Proposals

The last manpower issues I want to address are two separate initiatives which seek relief with regards to DOPMA requirements. Since the enactment of DOPMA, the Marine Corps has realized higher retention rates when compared with pre-DOPMA rates. The result of this high retention has been a steady climb in the average time to promotion and an aging of the officer corps. We are drafting a legislative proposal which requests that officers in the grade of lieutenant colonel through major general be allowed to retire after two years in grade vice three years. To maintain a youthful, vigorous, fully combat-ready officer Corps, we have lowered the officer promotion opportunities between five and ten percent. Projections for timely promotions in the future can be achieved with this promotion policy and the approval of our recommended legislation. Our second problem is the long standing difficulty the Marine Corps has experienced with DOPMA officer grade ceilings, especially in the grade of major. The current ceilings obstruct our ability to shape and manage our officer corps. We are reviewing its requirements determination process through an Officer Force Management Review Panel, and may seek legislative relief to amend our grade tables.

O&M

In real terms, Operation and Maintenance, Marine Corps funding decreased 9.0% from FY89 to FY90, and funding in this area for FY91 is essentially level with FY90. It is not possible to reduce funding by such a magnitude without making some hard choices. We have to reduce programs; however, we have tried to make these reductions with the least effect on readiness. On a percentage basis, the largest impact is on operating forces. This major reduction has occurred partially because this area was not affected as much as other programs in previous years. We are emphasizing less costly but equally effective training techniques. We are increasing individual and small unit training, conducting fewer large scale exercises, and training closer to home. We have not compromised on those aspects of operations and maintenance such as Battle Skills Training which are fundamental to our readiness. We have increased the funding for specialized skills training. We have ensured that those areas that affect our equipment maintenance receive the emphasis necessary to maintain our overall readiness. The resources needed to maintain the high quality recruits have been allocated as well. To do these things, we have had to accept some trade-offs. The maintenance of our real property, such as roads, facilities, and ranges, has been reduced. With our changes in training, we have been able to reduce our requirements for transportation and supply support. These reductions can be sustained over a short-term period without a negative impact. However, over the long term, continued reductions to our logistics functions will limit what we can do in our day-to-day operations. The operation and maintenance appropriation is a major factor in promoting the quality of life for Marines and their dependents. It provides for the training, operation, and support of our base activities. Before leaving operation and maintenance, I would like to reemphasize that we did not cut this funding across the board. We shifted our efforts towards such programs as battle skills training. At the same time, we are protecting the quality of life programs that are necessary to our Marines and their dependents.

With regard to Procurement, Marine Corps, we have experienced 10 percent negative growth over the last year. We have little flexibility left, due to the purchase of the M1A1 tank which comprises such a large percentage of this appropriation. The flexibility that we do have in procurement is being used to maintain current capabilities.

Aviation

Our progress within aviation is important to note.This past year has been the safest in the history of Marine Corps aviation. F/A-18 continues and the AV-8B Harrier II program is on track as well. The AV-8B multi-year purchase saves 128 million dollars and will bring us to a procurement level of 276. Beginning in late 1989, all production AV-8Bs will be equipped with night-attack features including a forward-looking infrared sensor, a color digital moving map, and night vision goggles for the pilot. Simply put, the AV-8B is the best close air support airplane in the world.

The amended FY 1990/1991 budget request contains a mixture of CH-53/UH-60 in lieu of the V-22 "Osprey." We are evaluating our medium assault support requirements and how this mixture of aircraft will support these requirements.

In the case of our AH-1W Cobra, our last buy was in FY-88 and provides the active force with six squadrons, with 12 aircraft in each. In FY-89 the production line will remain open to complete the AH-1T to AH-1W conversions. Unfortunately, FY-90/91 budget constraints did not allow programming of funds to replace our Vietnam era AH-1Js in our Reserves before the production line goes cold.

The Navy and the Marine Corps appreciate the Congressional support for the procurement of Navy programs critical to the mission of the Marine Corps, particularily the landing craft, air cushion (LCAC). The multi-year buy results in considerable savings for the taxpayer. The LCAC is already paying dividends in our operations in the Pacific and Mediterranean. Even more important, is the role it will play in the future. The LCAC remains essential to the development of the over-the-horizon amphibious assault.

Amphibious Shipping

Amphibious shipping is of great concern. Since World War I, we have had a real requirement to lift the assault echelon of a Marine Expeditionary Force in the Atlantic and Pacific, simultaneously. For affordability reasons, however, we have agreed to accept a goal of amphibious lift for only the assault echelons of a Marine Expeditionary Force and a Marine Expeditionary Brigade. Despite this compromise, a shortfall still exists. Simply stated we do not have enough shipping to meet operational requirements. Of great concern is the block obsolescence we face between the years 2000-2008. During this period, 47 of our current 63 amphibious ships will reach the end of their normal 35 year service life. While the construction of the WASP-class amphibious assault ship, multipurpose (LHD-1), and the WHIDBEY ISLAND-class landing ship dock (LSD-41), will enable us to attain our programmatic goal near the turn of the century, it will not be enough to sustain us beyond the next decade. In a world in which the ability to base our forces overseas is declining, our ability to project power and conduct seabased operations by means of amphibious shipping is critical to a forward-deployed strategy. The overall negative trend in amphibious shipping must be reversed. Your support for the timely construction of amphibious shipping in the budget request is crucial.

R&D

A major portion of our efforts in research and development are in programs which will enhance over-the-horizon assault. Our first priority is the advanced assault amphibian (AAA) which will replace our current amphibious assault vehicle, now approaching the end of its extended service life. Our requirement is for a craft which will achieve speed needed to close on the beach from positions over-the-horizon, in a matter of minutes. Such a capability can be accomplished by taking advantage of mature technology-base developments in lightweight, composite materials, advance power, and propulsion engines.

We need to upgrade the firepower and tactical mobility of our forces. Numerous studies have verified the need for a light weight, highly mobile, direct-fire capability in our light armored infantry (LAI) battalions. An assault gun on our existing light armored vehicle will add firepower to tactical mobility. We are exploring the feasibility of various gun systems to provide the optimal firepower compatible with our mobility requirements. We need an LAV/AG, and will select a system only if it meets our stated requirements.

Future

The decisions we make today must be viewed in the contextof our vision of the future. I do not see our national interests nor the fundamentals of national military strategy changing. Our strategy should continue to be based on three basic tenets: deterrence, forward-defense, and coalition defense. As we closely examine our ability to deal with the prospective imbalance between commitments and capabilities in the near-future, we cannot prudently eliminate or significantly modify any of these supporting tenets without incurring unacceptable additional risk. We need to significantly broaden our strategic focus to better balance our alliance commitments with the need to protect our unilateral interests worldwide. I continue to believe that our most effective deterrent is our ability to respond rapidly to any threat across the spectrum of conflict with an appropriate and measured response.

A belief exists that the threat of general war is abating. If it is, so much the better. But, no matter what happens tomorrow, this Nation's greatest strategic advantage lies in its ability to control the seas. We must have forces that are capable of moving and maneuvering on the seas for the ultimate purpose of influencing actions on a foreign shore; forces that are flexibly structured, self-sustaining, and of utility not just in a single scenario or level of intensity, but across the entire spectrum of conflict. The conflicts and unexpected threats which have been posed to our interests in distant regions of the world over the life span of our Nation continues to argue for such an expeditionary force capable of rapid response. For this reason the Marine Corps as an element of our national seapower remains forward-leaning and forward-deployed, prepared for instant employment when required. It is imperative that we maintain such a combat-ready force for whatever tasks may be at hand. We will not have this if the Corps is driven to force structure reductions. In the Seventies, we went through a similar period of austerity in which readiness and combat force structure were reduced. We remember painfully how reduced military capability limited our ability to respond to crises and achieve our national objectives.

Your Marine Corps is more combat ready today than it was at the time of my last report. It will continue to improve. We have pursued efficiency, but not at the cost of effectiveness. The ability of our operating forces to fight has been enhanced and our supporting establishment has been streamlined. Our focus is on readiness. We are leaner, more mobile, and more expeditionary. If asked, we could go to war tonight. Despite changes, one constant remains: our objective is to fight and win on any battlefield. We remain prepared to do whatever has to be done to protect national interests throughout the world. And just as I have promised you in the past, in the demanding times ahead, we'll take what you give us, do what's required - and more.

Our requests for FY90/91 are as follows:

($ MILLIONS)

Appropriation Table	FY89	FY90	FY91
Military Personnel Marine Corps	$5719.2	$5806.1	$5971.4
Reserve Personnel Marine Corps	315.1	319.2	337.7
Operation and Maintenance Marine Corps	1855.8	1716.3	1775.5
Operation and Maintenance Marine Corps Reserve	77.6	77.4	79.4
Procurement Marine Corps	1291.8	1196.8	1398.0
Family Housing Marine Corps Allocation	157.3	122.9	127.2
Military Construction: Marine Corps Projects	275.8	172.4	144.3
Military Construction: Marine Corps Reserve Project	4.7	10.6	8.9
Stock Fund Marine Corps	32.8	20.8	26.6
Total	$9730.1	$9442.5	$9869.0

BIOGRAPHY OF GEN. A.M. GRAY

Born in Point Pleasant Beach, NJ, General Gray enlisted in the Marine Corps in 1950. He served overseas with FMF, Pacific, attaining the rank of sergeant before being commissioned a second lieutenant in April 1952. Early tours included service with the 11th and 7th Marines, 1st Marine Division in Korea, the 8th Marines, 2d Marine Division at Camp Lejeune, NC, and Headquarters Marine Corps, Washington, DC, during which he saw service in Guantanamo Bay and Vietnam.

As a major, General Gray joined the 12th Marines, 3d Marine Division, Vietnam in October 1965, serving concurrently as regimental communications officer, regimental training officer, and artillery aerial observer. He took command of the Composite Artillery Battalion and U.S. Free World Forces at Gio Linh in April 1967. In September 1967, General Gray was reassigned to the III Marine Amphibious Force in Da Nang where he commanded the 1st Radio Battalion elements throughout I Corps until February 1968. Following a brief tour in the United States, he returned to Vietnam from June to September 1969 in conjunction with surveillance and reconnaissance matters in the I Corps area.

After his Vietnam tour, General Gray served as Commanding Officer of the 1st Battalion, 2d Marines; Battalion Landing Team 1/2; the 2d Marines; the 4th Marines; and Camp Commander of Camp Hansen, Okinawa, Japan. While commanding the 33d Marine Amphibious
Unit and Regimental Landing Team-4, and concurrently serving as Deputy Commander, 9th Marine Amphibious Brigade, General Gray directed the Southeast Asia evacuation operations in 1975.

Advanced to Brigadier General in March 1976, General Gray served as Commanding General, Landing Force Training Command, Atlantic, and the 4th Marine Amphibious Brigade. Promoted to Major General in February 1980, he assumed command of the 2d Marine Division, FMF, Atlantic, Camp Lejeune, NC, in June 1981. Following his promotion to Lieutenant General on 29 August 1984, he was reassigned as Commanding General, FMF Atlantic/Commanding General, II MAF, and Commanding General, FMF, Europe. General Gray was promoted to general and became Commandant of the Marine Corps on 1 July 1987.

He is married to the former Jan Goss of Burlington, VT.

MARINE CORPS OPERATING BUDGET

Senator INOUYE. If I may, I would like to begin the questioning on a high note and begin with the Marine Corps. In looking over the budget justification documents I came across statistics that impressed me quite a bit.

To put it in a nutshell, the Marines get more for less. The Army and Air Force cost more. They spend more, and apparently get less than the Marines for the dollars they spend. To be specific, the operating budget of the Marine Corps for fiscal year 1990, the O&M budget is $200 million below the 1988 funding level. From 1988 to 1990, Army O&M increased by approximately $500 million, Air Force O&M increased by $1 billion.

During that same period, the Marines have maintained force structure, the Army and Air Force have made significant reductions. Why can you do it and the others cannot?

General GRAY. I feel it would be appropriate to let the other services speak for themselves. What we have, of course, is a smaller overall force and the Marine air-ground logistics team and unity of command. We also have a long history of dealing with tight budgets and we believe that we know how to handle this challenge.

When we go into these tough budget cycles we try to do things that do not cost very much money; like keep the brain power turned on, new ideas, new concepts, and greater economies and efficiencies. Our forces are really combat forces in the fleet Marine force, and so we are able to get a lot of flexibility and aggregate usefulness out of it.

With respect to being able to do more with less, as you have inferred, we are masters at using the joint system. We rely, for example, on the Army for a great deal of sustained land warfare type equipment. We have hand-picked Marines at all Army and Navy laboratories and selected Air Force laboratories. We have also hand-picked Marines who conduct instruction at all of the other service schools. This information exchange eventually funnels back into Quantico, where we share the data in a global network. We try very hard to have a Marine Corps equipped with what we need and not what we want. Some people want a rifle that shoots around corners; we need a rifle that is accurate.

So there are a great many things, and we would be pleased to articulate more of them for the record, if we may, sir.

Senator INOUYE. I would appreciate that.

[The information follows:]

CHANGES IN TRAINING PROCEDURES

As I have indicated, whenever possible we take advantage of what is being done by the other services. In addition, there is also a number of things that we are doing internal to the Marine Corps to cope with this austere fiscal environment. We are going to make some changes in the way that we train. We are looking at exercises of all sizes and where there is duplication we will look to eliminate it. We are looking at where we train and where there are facilities such as ranges and terrain closer to home we will take advantage of that to save on transportation costs. Because we are emphasizing the mid and low intensity spectrum of conflict we are placing more emphasis on small unit and individual training. All of these type of actions will allow us to continue to maintain our readiness in the short term with some likely reduced sustainability. In short, we are making every attempt to do more with less. However, I cannot say beyond the short term, one to two years, there won't be negative effects. We will continue to evaluate all aspects of what we do to ensure that we are making the most of the resources that we have.

PERSONNEL RECRUITMENT

Senator INOUYE. In one of the prior hearings an Army witness testified that at this time in the recruitment of personnel about 10 percent are in category IV. What is your picture in the Marine Corps?

General GRAY. It is much less than that, sir. It is under 1 percent. We have very few category IV's. Today, about 99 percent of enlisted Marines are high school graduates and the other 1 percent better be in some program to become high school graduates or we will get some new commanders in the field.

Senator INOUYE. What is the picture in the Navy, Admiral?

Admiral TROST. We were just discussing that, Senator. I do not know off the top of my head the exact number, but I suspect ours could be somewhere in the 8 to 9 percent category. Do we have the exact number there?

Secretary GARRETT. We do not have the exact number, Mr. Chairman, on category IV's, but in my experience—and we would be happy to get that for the record—it is far less than what it was when I was on active duty back in the late 1960's and 1970's.

Of course the recruitment picture itself, given the demographics that we face over the coming years, is not going to get any easier. I think we all realize that. I think, as General Gray pointed out, it just requires that we become a little more imaginative and that we in fact do protect those programs that we have in place for our people so that we maintain our credibility with them, to both attract them and retain them.

Admiral TROST. I might add, Senator, that our category IV's must be high school graduates. They must have demonstrated some success orientation in life in order to come in.

One of the reasons that drives us to take a certain number of category IV's is that we also suffer from the lowest recruit and recruit advertising budget in the military, and we end up therefore unable to compete successfully across the board for some of the people in the higher mental groups. That is the result of a lower image or awareness of the naval service and also the fact that an awful lot of people are not necessarily drawn to the concept of going to sea for extended periods of time and facing the family separation that is inherent in naval duty.

Secretary GARRETT. I would point out also, Mr. Chairman, that notwithstanding the arduous nature of sea duty for both the Marine Corps and the Navy, that our first term reenlistment statistics through April of 1989 are still at 60 percent, which I consider good. But, of course, we would like to improve upon it.

CARRIER BATTLE GROUPS

Senator INOUYE. Yesterday, Admiral Knight testified that the Navy is still basing its planning requirements on 15 deployable carrier battle groups, and at the present time there is no plans to reach that 15 level.

My question is, does that mean that the levels of aircraft, the ships and equipment that this amended budget is requesting and the 5-year plan are designed to support a larger Navy than we are anticipating?

Admiral TROST. Not really. The 600-ship goal and the capability inherent in the 15 carrier battle groups and the necessary support ships and submarines and amphibious lift have been a goal which we have been approaching. The procurement that you see in the budget and the 5-year defense plan will sustain that lesser level of 14 carrier battle groups. It is also designed to help close the gap in those areas where we have considerable shortages and to offset with continuing new construction the very severe impact that comes from force structure reductions forced by the lower budget level.

For example, we are going to retire early 32 of our older antiair warfare capable ships, the DDG's of the 2 and 37 class. Their replacements were to be the Arleigh Burke class destroyer, the DDG-51, which will start coming into the inventory in the early 1990's, but in fact will not build up to a level to offset these retirements until the end of the decade. So we are really buying to offset current shortfalls and those that come as we retire older ships.

Senator INOUYE. If we are cutting the number of carrier battle groups and also the number of combatants in each battle group, why cannot the acquisition of the Aegis destroyers be reduced below the level of five per year?

Admiral TROST. Well, we have repeatedly stated the level of five as that level necessary to have competition and keep the prices down. Five per year maintains the industry base at a very competitive level. It maintains two shipbuilders at a work load level that guarantees us the best price.

We also need those ships, as I noted, to offset the shortfall that we have today in antiair warfare capability with our battle groups and to offset the increasing shortage that we face as we are forced to retire our older ships for budgetary purposes.

Senator INOUYE. I ask that question because up until fiscal year 1990 there will be three ships per year, and then from 1991 they go up to five.

Admiral TROST. No, sir; I think what may be confusing is that we have a mixture of DDG-51's and Aegis cruisers.

Senator INOUYE. Four in 1989 and five in 1990, yes. But in the earlier years you must have felt that three would be sufficient to maintain the industrial base.

Admiral TROST. No, sir; it was the mix of DDG-51's and the Aegis cruisers which use similar combat systems that we maintained at a level. We wanted to keep the level of this mix at five to six per year.

Secretary GARRETT. Mr. Chairman, if I may, that has essentially been our acquisition strategy in the Aegis platforms, that is five a year. And, of course, with your support we bought out the cruisers at five a year and then transitioned into the DDG-51's. We feel five a year is important to maintain the proper mix to support the two builders and keep the competition.

NSA RECOMMENDATIONS

Senator INOUYE. I am trying to ask questions that I am certain many of my colleagues will be asking this subcommittee. Here is one that has been brought to my attention by several of my colleagues. General Scowcroft, before becoming the National Security Advisor, coauthored a memo to President-elect Bush which recommended greater reliance on smaller ships and submarines carrying accurate conventional cruise missiles instead of aircraft carrier battle groups for forward-deployed naval power.

He suggested reduced forward operations would save operating funds, address manpower retention problems, and still meet the Navy's tactical air needs. Would the Navy wish to comment on Scowcroft's recommendations?

Admiral Trost. I would be delighted to, Senator. I did at the time and I do at every opportunity disagree with his comments and his recommendations.

He put forth, for example, that submarines with cruise missiles would be adequate replacements for battle groups. I doubt that that view would be shared by any prospective enemy or anyone in a crisis situation who wanted to take on the U.S. Navy. Submarines with missiles are highly capable, but they are out of sight. They are not a conventional crisis situation deterrent, in that you cannot start shooting cruise missiles over land as a deterrent to anyone's aggressive intentions or to terrorism.

We have been well served ever since World War II by our forward-deployed forces and what we have really proven is that our ability to be there and react in timely fashion has deterred more serious situations in many, many cases. To draw those forces back says we are not there as a force for stability. We no longer provide the assurance to people such as those in the western Pacific, a prime example being China and Japan and Korea, who look on our forward-deployed forces as the stabilizing factor for that region.

So to pull back would be a marked change in our foreign policy and in our ability to influence those events that are important to this country. So I would disagree with General Scowcroft.

He also proposed taking some of our forces, such as aircraft carriers and manning them with reserves as a way of saving money. That has been studied very, very extensively. Frankly it is an impossibility because one cannot maintain a ready aircraft carrier, safely operating high performance aircraft in all kinds of weather with people who are doing it a weekend, a month, or occasionally.

Senator Inouye. What about his suggestion that you operate two or three carriers together, thereby reducing the requirement for surface ship escorts?

Admiral Trost. Well, it sounds fine if we are looking for rationalization to reduce forces. We would in fact operate two or three carrier battle groups together in a combat situation that required that combination of power. But to say well, we will just operate them together and save surface combatants presumes that now we have places in peacetime where we would mass three carriers together and reduce surface combatant requirements.

What we would really be doing is putting a lot more carriers forward-deployed under those situations, with fewer surface combatants, stretching our sailors ever further.

Senator Inouye. I have many, many other questions and I will come back to them, but at this time may I recognize Senator Specter.

Senator Specter. Thank you very much, Mr. Chairman.

EXPLOSION ABOARD THE "IOWA"

Admiral Trost, the tragedy aboard the *Iowa* I know has occupied a great deal of your time and the time of others in the Department of the Navy. There appear to be many leaks coming from the investigation identifying the possibility of some liaison as a possible cause, materials about an alleged $100,000 insurance policy.

The question that I have is, considering the seriousness of the incident and the tragic loss of life, what efforts have been made by the Department of the Navy—and I might be addressing this question as well to Secretary Garrett—to curtail these leaks or premature or inappropriate disclosures?

Admiral TROST. I would be happy to address that, Senator Specter. First of all, the efforts that we have made to eliminate or curtail disclosures are that we have reminded everyone that while an investigation is in progress and until it has been reviewed up the chain of command we will not, and cannot, comment on the contents of that investigation.

My own investigation indicates that the leaks we are talking about come from the very intensive media coverage and coverage, including conversations in some great detail with families, in this case a sister and the family of one of the deceased members, and with one of the surviving crew members of the Iowa.

The things I read in the news do not come from Navy sources. Contrary to some of the charges we have seen in the last week, we are not leaking information because very few people actually know what is in that investigative report up to this point in time.

Senator SPECTER. Well, have you made any efforts to determine if there are any leaks within official Navy sources?

Admiral TROST. Yes, we have, and we have identified none.

Senator SPECTER. Well, leaks are obviously very, very difficult. It appears that we are becoming more and more plagued by leaks at every level of our governmental operation. Where you have a tragedy of this sort it seems to be about the worst kind of a situation for leaks. I know that when you are in charge of naval operations there is nothing you can do to really preclude it totally, but I would ask you to make every effort you can, redouble your efforts to preclude those kinds of premature disclosures.

According to the information that I have, Admiral, of the 58 personnel who were present in the area where the tragedy occurred, 47 were killed, 11 escaped. All were enlisted personnel except for one lieutenant, junior grade.

The question which comes to my mind is why was there not more senior officer personnel in a supervisory capacity on the site?

Admiral TROST. Not necessary, not called for. The turret officer is the only officer who would be present under that situation, accompanied by a number of trained senior petty officers who know their jobs, do their jobs, provide the necessary supervision.

Senator SPECTER. So you are saying that that is par for the course?

Admiral TROST. It is par for the course and is in accordance with the battle bill.

V-22

Senator SPECTER. Mr. Secretary, let me pick up with you for a moment or two on a subject you and I discussed informally before the hearings began, and that is the V-22. I would like to ask you about it too, General Gray, and perhaps we could start with you, General.

You have been quoted by the Secretary of Defense something to the effect of the elimination of the V-22 bringing, I think the quote was, bringing tears to your eyes, experienced-hardened Marine. But, getting to the substantive matters, if the Congress does not reinsert the V-22—and I think there is a significant likelihood that that will occur—how do you see carrying forward your military obligations in the absence of the V-22?

General GRAY. Thank you, Senator. For the record, I only weep over fallen comrades. No military hardware is worth that.

What we have done in honoring the decision and in supporting the Secretary of Defense is to take a hard look at how we will come from the sea. We will continue to come from over the horizon, as we do today. Clearly, we will not be able to do that as well. We are stressing the positive aspects of what we must do. We are continuing to improve our command, control, communications, computer intelligence, and integrated operability to come from over the horizon.

We have already taken major steps to increase that capability. We have four concurrent efforts going on right now to look at the mix. I am very concerned about the mix and how we would employ the tactics that we would use and how we would conduct the amphibious assault, sustain subsequent operations ashore as part of that amphibious operation, and then any other sustained land operations as part of a joint and combined campaign.

The focus of most of the discussion has been, up until now, limited to the somewhat narrow confines of the ship-to-shore movement. When analysts and statisticians build lift plans and lift models, we hear a lot of talk about square and cube. But you fight with equipment, materiel, helicopters, men, and the like; so we have to be careful here.

So what we must do is at least submit our view of what the operational requirement is to come from the sea with other than MV-22 helicopters. This would include my recommendations as the Commandant charged by law for research and development of coming from the sea, for the numbers of Blackhawk helicopters and the numbers of CH-53's that we believe we would need.

We should have an alternative there for other kinds of helicopter technology. There are other good helicopters. The Blackhawks are earlier technology, as we know. The CH-53E represents late 1970-80 technology. I think we owe it to the country and to the Department of Defense to look at all alternatives.

We certainly would include other kinds of mixes, even to include perhaps some way to use our aging CH-46E's. So all of these efforts are being pulled together now and we hope to have some good, definitive information here within another 5 or 6 weeks.

We are also doing a joint Navy-Marine effort on the overall business of coming from the sea for the next 15 or 20 years and what the requirements are.

Senator SPECTER. General, I know you are a good soldier and you will abide——

Senator BUMPERS. Oh, watch that. He is not a soldier. That is about the worst insult anybody can pay a Marine, is it not, General?

General **Gray**. As a young officer, as a major, I was privileged to command all the free world forces in the northern part of South Vietnam, and I had a great many soldiers in that command of mine, so that is a compliment.

Senator **Bumpers**. That is what he is saying in public. [Laughter.]

Senator **Inouye**. Please remember that the chairman of this Committee is an infantryman.

General **Gray**. That is right. I remember that. [Laughter.]

Senator **Bumpers**. Just a few of us are born to rule, General.

Senator **Specter**. I would say, General, that is the most soundly Senator Bumpers has been undercut in his 17 years in the Senate.

As I was saying, General, I know you are a good soldier and you will follow the instructions that are handed down, but among the many cuts which the Marine Corps has had to undertake and many things you would like to have reinstated is there any item in that long agenda that you would like to have reinstated as much as the V-22?

General **Gray**. The MV-22 of course was our No. 1 aviation priority, as I have stated before other committees here. Within that context, it is fair to say that your Commandant had the opportunity to lay out the operational requirements and the need and what in his view is the overriding justification for the MV-22.

Your Commandant failed to carry the day within a very constrained budget environment within the Department of Defense. Some of the people within DOD and I do not agree on some of the data and that is to be expected. But the MV-22 is a great concept. It is a national asset. I really believe it is in the interest of the Nation to somehow figure out a way to carry this program on for many reasons.

When we first determined and decided on the type of aircraft we needed for all four service requirements, there were 26 mission capabilities submitted to the Department of Defense in 1984. So it has enormous potential and aggregate usefulness. It was going to be used to increase tactical mobility for the Army, for special operations for the Air Force as part of the overall special operations requirement, and it had great utility for us in the assault part of an amphibious operation and subsequent operations ashore.

Having said that, it is a darn expensive program, regardless of whose figures you have; and it is a hell of a time to have an expensive program. We fully recognize the situation, so we will do whatever is required to continue to give you the kind of Marine Corps you need.

Senator **Specter**. I hear the words and I also hear the music, General. You may have some reinforcements from the Congress—Senator Inouye from the infantry, some might be from the Marines, and some like myself may be from the Air Force.

If I may have just one concluding question for you, Mr. Secretary, we were talking informally, as I alluded to before, about some alternative funding sources for the V-22. We will be searching hard. Is there a possibility that there may be some funding for fiscal year 1991 or some other year which might be reallocated to research and development necessary at this stage?

Secretary **Garrett**. Well, we lost, as you know, Senator Specter, all of the V-22 funds that we had put in the budget for 1990 through the fiscal year DP. The only funds that are available today are those funds that remain in 1989. And, as I would point out, to supplement what General Gray said, we did have the opportunity and we fought very hard.

I think we made all of the facts known to the Secretary of Defense, who, as I pointed out to you earlier, had a much larger universe of issues to deal with, and made the decision that he made, I think primarily on the basis of affordability and priority.

The No. 1 priority of the Secretary of the Navy and the aviation community is the ATA. We have a tremendous shortfall, in my view, in our all-weather medium attack aircraft. The V-22 was a very important part of the aviation program that we had put together, but, as General Gray pointed out, I am sure the Secretary did not look simply at 1990 and 1991, as none of you gentlemen do as well; you look over the total cost of the program.

I think our collective view is that while we may not be able to do and carry out the missions that are assigned as well as we would have been able to had we had the V-22 we will still be able to carry out those missions. It will just be more difficult and require greater management.

Senator SPECTER. Thank you very much.

General GRAY. I would like to add, over the long haul into the next century, a great deal more dangerous without the capability afforded by the MV-22.

Senator SPECTER. Thank you.

Senator INOUYE. Thank you. Senator D'Amato.

F-14

Senator D'AMATO. Thank you, Mr. Chairman. I would like to add my welcome to our witnesses today, especially to the Secretary of the Navy, Mr. Garrett. I wish him good luck in his new post.

Mr. Chairman, I believe that the Navy will have the most critical role of all the armed services in the defense of our Nation in the immediate future as we consider withdrawing forces from various parts of the globe. The Navy, with its ability to project power anywhere in the world, must remain ready and will probably be our premier defense.

It is for that reason that some of the cuts in fiscal year 1990 cause me concern. The maritime power of the United States depends to a great extent upon the aircraft task forces. They provide the full range of fire power to the fleet. And yet they are only effective if they can launch long-range fighters with the capability to shoot down attacking enemy airplanes.

It is that fighter plane, the F-14 Tomcat, the world's premier naval fighter, which fulfills this role today. New production of the F-14D has been cut. It has been eliminated from the budget. The designated replacement for the F-14 is the Naval Advanced Tactical Fighter, NATF. But that is still on the drawing boards and not due to become operational until after the turn of the century.

By that time the Navy will have a shortfall in the F-14's which will affect their ability to adequately defend the fleet. The Defense Department apparently feels they can take this risk and rely on the NATF to be produced without problems. Of course, that has not been our experience and it will not be in this situation.

I would like to see how they are going to play with the figures and have us produce it earlier, Mr. Chairman, because I think that is what they are counting on. That is nonsense. The history of the U.S. fighter production does not show this to be a reasonable assumption, that they are going to come in on time.

The real problem is that if the NATF is delayed the F-14 production line will no longer be available. That raises a number of questions. We have heard here, and I will revert to them, about the necessity for competitiveness. I have heard both the Secretary and the Admiral talk about why it is necessary to keep that competitiveness as it relates to shipbuilding, their own testimony.

Well, if we eliminate the F-14D, what about competitiveness in the future as it relates to the naval needs? Are we not gong to have just one source?

Secretary GARRETT. It could very easily be greatly restricted, as you point out, Senator.

Senator D'AMATO. Does that concern you?

Secretary GARRETT. It does concern me.

Senator D'AMATO. Mr. Chairman, I think what we are talking about is the destruction of an industrial base called Grumman that provides competitiveness at this time. This is just not a situation where we are cutting back on a plane that is not necessary; we are talking about a plane that is absolutely necessary.

Former Assistant Chief of Naval Operations, Vice Admiral Dunn, testified and he said before the Senate Armed Services Committee that terminating the F-14 production would leave the Navy unable to meet its commitments.

Admiral, what is your response?

Admiral TROST. Well, he certainly is most accurate. What he was saying was that without further production of the aircraft the remanufacturing of aircraft does not add further service life to those air frames. Therefore, in the time frame of roughly 1996-97, depending on attrition up to that point in time, our inventories will be below those required to adequately fill the necessary squadrons on carrier decks to carry out our missions as we do today.

Senator D'AMATO. I would point out that we are talking about 14 aircraft carriers at the present time; is that correct?

Admiral TROST. That is correct.

Senator D'AMATO. We are thinking about going up to 15?

Admiral TROST. Our goal is 15. We have been directed to remain at the level of 14 through the balance of the next decade. We also were forced in the 1989 amended budget submission to reduce one of our active carrier wings, so we are now at a level of 13 active wings and two reserve tactical air wings.

Senator D'AMATO. Well, let me ask you this. By terminating the new production of the F-14, the Navy is committing itself irreversibly to the Navy Advanced Tactical Fighter, NATF. Should the NATF be a repeat of the disastrous joint Navy-Air Force tactical fighter experiment, FSX, program of the 1960's, how will the naval aviation carry out the fleet air superiority air defense mission?

Admiral TROST. May I just step back a minute to the early portion of your statement? We did not eliminate by choice. We were faced with the same decisions, having submitted a budget. The Secretary of Defense then had to decide which portions of that budget he was going to cut further. While we regret the cut, we recognize what drove it. It was fiscal reality which drove the reduction.

How are we going to manage it? We are going to have to recognize that we will be short of assets and we are going to be good asset managers by making sure that we do some cross-decking of aircraft. That means that aircraft squadrons that are back in training status are going to have fewer airplanes available to them at any given time in order to keep the decks filled.

It means that if we have an all-out crisis situation we will bring aircraft that are currently in our fleet readiness squadrons out on decks. It may mean that we will have to function with fewer aircraft per deployed squadron in order to carry out the mission. We will stretch them as far as we can.

Senator D'AMATO. Well, Admiral, what you are suggesting is a scenario which is not one which is a very pretty one, and which as a matter of fact places the Navy in a rather precarious position as it relates to its operation.

I might point out to the Committee we are not talking, as wonderful as it would be to have the Osprey 22, we are not talking about something in the future. We are talking about something that we have now and that will certainly debilitate and reduce our capabilities and effectiveness from what we have now as opposed to projecting an improvement.

I think it is shortsighted. I skipped ahead as it related to the fact if Grumman is knocked out of the aircraft production business, and that is what this decision means. Let us make it certain. Let us put it on the books.

Mr. Chairman, if F-14D is eliminated, Grumman will no longer be able to compete as an effective force in air production. They may do some kinds of repair, reworking, et cetera, but it will no longer be a viable competitor. That is what this decision is about.

I think it flies in the face as it relates to your strong program, the Navy's strong program advocating competition. How do we justify that?

Secretary GARRETT. It is very difficult to justify it, as you point out, Senator. I think, as Admiral Trost points out, the bottom line is that the top line continues to come down and of the $3.9 billion in additional cuts that the Navy took in 1990, 75 percent of those cuts came out of force structure. As he points out, 32 of our DDG-2's and 37's are going out. We have been told to put 24 frigates into the reserves. We have lost some of the submarine production that we had anticipated.

Looking at the Gramm-Rudman targets that are in the outyears, I personally do not see that getting any better. I see my job as the Secretary of the Navy in the coming years to work closely with the Committee and the Congress to maintain what it is we have achieved over the past decade.

As the Chairman pointed out, in the Marine Corps those achievements have been marked and they have been in the Navy as well. But as long as the top line comes down I think this is just the reality that we will continually face, and we will continue to be forced to make these very, very hard choices.

This was not something, as you know, that we embrace warmly, but we in fact are faced with reality.

Senator D'AMATO. Well, Mr. Secretary, let me leave you with this thought. I understand where this has come from. I just believe that it is the wrong way and the wrong area in which to effectuate economies. In the long range, it is going to wind up costing us much, much more in the way of dollars.

It is going to eliminate competition and eliminate an important part of our industrial base, and weaken that carrier group so that we are going to have to do the kinds of shuffling that Admiral Trost has talked about that certainly is not in the best interest of providing for national security and worldwide security.

It does not make sense, and I would hope that we could revisit this and I have understood that Secretary Cheney has indicated that he is not irrevocably wedded to this, that he would not fight this out. But there is a claim for dollars that is going to be tough. But I think if we do not find sufficient funds to keep that line open, Mr. Chairman, we will be making a very severe mistake. It will be compounding a situation that already is difficult and making it much worse in the future.

I thank the Secretary and the Admiral for their candor, and I thank the Chairman for his courtesy.

Senator INOUYE. Thank you. Senator Bumpers.

Senator BUMPERS. Mr. Chairman, in spite of my remarks earlier I have the utmost respect for the Army and Navy, but if you are a Marine, of course, that is the first thing you learn in boot camp, is that you are not a soldier; you are not a sailor; you are a Marine. We do not call soldiers sailors and we do not call Marines soldiers. It is not intended to be denigrating in any way.

Certainly one of the most, if not the most, decorated combat veterans in the U.S. Senate is chairman of this subcommittee, for whom we all have much love and admiration and respect.

As a matter of fact, General Gray, I might tell you this story. When Senator McCain was a Navy captain he and I became good friends when we went down to christen the U.S.S. *Arkansas*, a CGN cruiser. It is a Virginia-class cruiser.

We became good friends after that before he came to the Senate, and we used to batter each other as Marines and sailors do, and one day I said, John, did you ever hear the old saying about 10,000 gobs laid down their swabs to fight one sick Marine; 10,000 more jumped up and swore it was the best fight they had ever seen.

He said, yes, I have heard that. He said, Dale, you do not understand. I wanted to be a Marine too, but they would not take me because my folks were married to each other. [Laughter.]

General GRAY. How do you get out of this? [Laughter.]

The only thing I can say is there are not any crowded battlefields.

TRIDENT SUBMARINES AND START AGREEMENT

Senator BUMPERS. Mr. Secretary, one of the things I have been concerned about is we are looking at long-lead items for 19 Trident submarines, and one of the things, as you know, that has been talked about in a START agreement is 6,000 RV's. Right now the

Navy has 70 percent of the RV's and I do not quarrel with that mix.

Let me say again in prefacing my remarks I think one of the reasons we are having a difficult time with the START talks is we have not finally decided—perhaps you know better—what kind of mix we want in our strategic force posture when we finally maybe execute an agreement to limit our RV's to 6,000.

I have always been a strong proponent of the Trident and I remain a strong proponent, but I am concerned about going ahead with the ultimate goal of 21 Tridents. My first question would be, do we want any more after that? Maybe my first question ought to be different.

My second question would be, do we want any more than 21 Tridents? But do we need 21, based upon what you know about what our force posture will be if we are in fact limited to 6,000 RV's? Admiral, do you want to take the question?

Admiral TROST. I think I would, with your concurrence, Senator, since that is an issue that has been discussed at some considerable length by the Joint Chiefs. Obviously in open session I will limit what I have to say about the subject, but I will note that our position has been that we will not at this point in time develop or promulgate an illustrative goal under START, since the conditions that would lead to an ultimate START force structure really cannot be determined until we conclude the negotiations.

I will, however, say there is nothing wrong with your number of 21 Trident submarines. That is a fair, safe goal to shoot for and say, yes; we can use them. It is also safe to say that we would probably like a few more. How many more or whether they would be required, I will not discuss here.

It is just prudent for us not to close out our options while we are negotiating an overall START agreement. So you will find that none of us will be prepared, none of us who are members of the Joint Chiefs will be prepared to stand before the Senate or the House and address specific numbers beyond stating the necessity of what we have in our budget right now.

Senator BUMPERS. Well, if we had 21 Tridents that is about 4,032 RV's.

Admiral TROST. Exactly.

Senator BUMPERS. That does not leave the Air Force much wiggle room and it may be that they will have a slightly different version of how many submarines there ought to be, because you are looking at right now 50 MX's, representing 500 RV's.

Admiral TROST. That is correct.

Senator BUMPERS. So, as I say, I am not going to quarrel with this because I think the most invulnerable strategic force we have are our submarines. But I do not want to get out there and wind up dismantling $2 billion submarines as a result of a START agreement.

Admiral TROST. I do not think you will have to worry about that. I know that there have been presentations to the Congress of illustrative force levels. They have a goal, obviously, but those are not force levels that have ever been presented to or approved by the Joint Chiefs. We do have that responsibility.

Senator BUMPERS. Who has presented those?

Admiral **Trost**. They have been presented on the Hill in briefings.

Senator **Bumpers**. By the Arms Control and Disarmament Agency?

Admiral **Trost**. No, sir.

Senator **Bumpers**. It is some concern to me.

What is the cost to overhaul a Poseidon?

Admiral **Trost**. A refueling overhaul about $130 million.

Senator **Bumpers**. What is the Navy's plans now as these Poseidons come up?

Admiral **Trost**. We had been directed by both the Congress and the Secretary of Defense in prior years not to overhaul those submarines requiring refueling but to decommission them as our Trident force built up. That maintained a certain level of missile capability and warhead capability at sea which was deemed adequate for our defense.

Senator **Bumpers**. Are you familiar with a proposal that has been discussed at the START talks about submarines in for refitting and overhauling would not be counted while they were in for overhaul?

Admiral **Trost**. There is such a proposal, not a negotiated position.

Senator **Bumpers**. Well, it seems to me like that would favor the Soviets. They are always going to have two or three times as many missile-launching submarines as we have, and therefore would have more for overhaul. What is your position on that proposal?

Admiral **Trost**. My position would be that we will very, very carefully—and again I will not amplify in open session, nor can I preempt the deliberations of my fellow Chiefs—look at every aspect of the negotiating position that is put forth with a view toward what is the relative advantage that it offers to us or to them.

So I can assure you only that we will have taken that factor very thoroughly into account.

MULTIPLE-LAUNCH ROCKET SYSTEM

Senator **Bumpers**. Admiral, are you familiar with the Army's MLRS system?

Admiral **Trost**. Very, very basically.

Senator **Bumpers**. It is, I think, one of the most successful weapons that we have developed in this country in many years, and I think it is a very effective one and it is one that is produced under cost, actually, the original cost estimates.

My question was whether or not MLRS might have some application for ship use.

Admiral **Trost**. I cannot address the question because I do not know enough about the system. Al, could you help?

Senator **Bumpers**. I understand the Marines are getting ready to get MLRS, if they do not already, are they not?

General **Gray**. The multiple-launch rocket system [MLRS] is a very fine, effective system. The Marines have a plan to acquire it. It is an interesting situation because the Marine Corps favors it; the Commandant does not in its present configuration, so I have a little bit of a problem with my colleagues.

Senator **Bumpers**. What is your objection, General?

General **Gray**. It is a great system, but it is almost as big as this room. We have to come from the sea and we have to be conscious of that. Some years ago when I was in the research and development business I tabled a concept where we would use half of the MLRS pallets, half of the number of rockets on a pallet and come up with a capability to fire it out of assault amphibious vehicles and smaller vehicles.

Those kinds of conceptual ideas conceivably would have some application, particularly on some of the amphibious ships and the LCAC. We have pursued this in the conceptual framework and we continue to look at it; but it is again a very, very fine system and rockets offer an enormous amount of firepower when you need it.

My concern with MLRS for the Marine Corps rests with the size of the launching vehicle and the size of the ammunition-carrying vehicle. We would have to modify it for saltwater corrosion and all those kinds of things. But it is a very fine system and these things come up against the affordability issue as well.

D–5

Senator **Bumpers**. Mr. Secretary, do you have any follow-on research going on into the D–5?

Secretary **Garrett**. At this time, I do not believe we do. Carl, you may have an answer.

Admiral **Trost**. Yes, sir; again in this session I would only note that we are looking at improvements to the D–5 itself, as well as to the potential for follow-on systems and what they should look like and what they should be like.

Senator **Bumpers**. It seems to me that if the Soviets and the United States both wind up with an ABM system that we would be well advised to be doing some considerable research on a follow-on to the D–5.

Admiral **Trost**. We will do our best to make sure we do not fall behind, Senator. We are pursuing research under all the what-ifs of what we might have in the future.

Senator **Bumpers**. Thank you, Admiral. Thank you, Mr. Chairman.

Senator **Inouye**. Thank you. Senator Cochran.

Senator **Cochran**. Mr. Chairman, thank you.

SOVIET THREAT

Mr. Secretary, I noticed in your statement you are talking about the fact that at the end of 1991, I think, we will have almost 600 ships in the fleet, and I wonder in view of the General Secretary's comments in the Soviet Union about the possibility of cutting back its expenditures on military systems and reducing the size of its defense budget whether you see any Soviet proposals that have related to its navy and cutting back naval forces or slowing down the production of Soviet ships.

Secretary **Garrett**. I have not seen any formal proposals. I have heard talk about some proposals to reduce in some fashion or number much older platforms that they have that I would not in any way equate to a need or the indication that we should be considering anything of like sort.

Admiral, you may want to comment.

Admiral TROST. That is really the area they have talked about. There has been implication that they would reduce naval forces, but their major thrust has been aimed at finding ways to reduce our Navy, which gives them considerable concern.

They have made several agreements with other countries and with businesses to develop capability for scrapping within the Soviet Union in order to scrap older combatants, both submarines and surface vessels. These are by and large ships from the 1950's timeframe which are obsolescent and have been sitting alongside piers in a caretaker status.

It would be a great way both to save operating funds, manpower, and also to gain some foreign currency by scrapping the platforms, and they have lots to scrap. Unlike our practice of getting rid of that which we do not need any more, that which is obsolete, they maintain a very large number of such ships.

Senator COCHRAN. I think when Admiral Crowe's counterpart was here in our country for a tour around he made some comments about how he perceived one of the serious problems in our relationship to be our Navy. Our Navy was so strong. He made some comments to that effect. I think you related those to the Committee at one point.

Admiral TROST. That is correct, sir. He was very, very adamant about his concern about the Navy and said that when it came to peace and stability we, me, my Navy, were the problem because we represented such a formidable force that it worried the Soviet Union. I reminded him that that is deterrence, which is our principal goal. If they are worried about us, by God they are deterred.

Senator COCHRAN. Well, to what extent would cutbacks by the Soviets in their navy or defense forces generally affect our long-range goals for a 600-ship Navy or other modernization activity which we are planning to have?

Admiral TROST. I think we would have to look at two things. We would have to recall that we are, after all, a maritime Nation dependent on free use of the oceans for both our economic and political ties to our friends and allies around the world, while the Soviet Union is essentially a land power without those same requirements.

On a day-to-day basis and for meeting crisis control requirements, we need a Navy of approximately the same size as that minimum force level which the Joint Chiefs are willing to endorse as having acceptable risk in a combatant situation with the Soviet Union.

So if the Soviet threat declines, yes, there is less of a requirement perhaps for a Navy to counter that specific threat. I emphasize if. But the level of forces required to maintain peace or stability under our current policy around the world would demand roughly the same size Navy.

I would point out that there is no indication in any current Soviet rhetoric or any of our observations that they are in fact cutting back. They continue to build better submarines. They continue to crank out very well-armed nuclear-powered cruisers as well as conventionally-propelled ships. They are building aircraft carriers. They have started construction of their third.

So clearly they recognize the need in their view for a strong navy in order to pursue their political objectives.

Senator INOUYE. Will the Senator yield?

Senator COCHRAN. Yes; Mr. Chairman, certainly.

Senator INOUYE. Mr. Secretary and gentlemen, I will have to leave now because we are taking up the urgent supplemental at this time, and there is an amendment affecting this committee's portfolio. So I am asking my dear friend, the vice chairman of the subcommittee, to take over at this time.

Secretary GARRETT. I would reemphasize, Senator Cochran, what the CNO has said. Given the posture that we have maintained over these many years, maintaining the credible deterrent is what it is all about. To impact negatively on that deterrent only invites mischievous actions around the world.

So I think, as I said at the beginning, my task as the Secretary is to protect that which, with the help of the Congress, we have acquired and maintained and worked toward meeting that minimum requirement as set forth by the JCS.

SEALIFT

Senator COCHRAN. One thing I recall from testimony from those who appeared before our Committee who represented the various regional commands, area commands, the commanders in chief of the Pacific forces and around the world was the priority that they place on our sealift capability and in an emergency being able to move men, equipment, and supplies over long distances over the oceans, and how that capability was really in trouble, that we really had a problem.

In talking yesterday at a hearing here in the Committee I asked about whether or not there was a program for dealing with that problem, and apparently there is none. Is there any consideration being given to proposing to Congress some program or course of action that would deal with the inadequacy of our sealift capability, or is it in adequate?

Admiral TROST. I think the comment made yesterday may refer to the fact that there is no national sealift program such as that which was proposed by Secretary Carlucci last December. We have had many people bemoan the decline in status of our maritime industry and of our merchant marine forces.

To say that there is no program to counter the problem ignores the efforts that we have been making over the last 9 years to offset the effects of a declining U.S. maritime industry. We have in fact been working hard within the Navy. We have expended about $1 billion a year in building up a Government controlled capability to offset the shortfalls in lift which face our unified commanders.

For example, what we have done in fact, is to put three maritime prepositioned squadrons to sea, each of which would support 36,000 Marines. That is a rather considerable capability for afloat prepositioning of equipment and supplies to support a Marine force. We have 12 other ships which are loaded with equipment and supplies to sustain Army, Air Force, and, to a smaller degree, Naval forces forward deployed.

We have been purchasing ships on the open market as they became available, ships that had utility for application in lift. We have purchased almost 100 of those ships at this point in time, and they were last year turned over to the Maritime Administration for maintenance and administration. Recognizing the problems we had in offloading capability in undeveloped or damaged ports, we have bought and converted 10 ships to heavy crane ship configuration.

We have a fair number of tankers in our inventory. We have developed a capability to utilize container ships for bulk cargoes such as tanks and other heavy equipment. We have a program which purchased sea sheds and flat racks and adapters in large quantities to be able to use in these container ships.

We have provided capability to offload containerized cargo. We have provided the capability to offload POL products onto an undeveloped beach. We have provided for two hospital ships which were conversions of merchant ships which we were able to buy. We have bought two ships to provide aviation support to rapidly-deployed Marine Corps forces.

What we have done in the aggregate is that we have been able to meet almost all of the POL and container and ready lift of normal size cargo that the CINC's require. Our only shortfall is a shortfall of several percentage points in bulk lift of very large, heavy equipment such as tanks and large trucks.

So I think we have had a rather considerable program in effect to offset the shortfalls that our maritime industry offers us in wartime capability.

General GRAY. Could I just add a comment as an honest broker. We have also streamlined all of our equipment in your Marine Corps so that it is containerized and moveable on all the sea-trans type vessels and so on.

Another way of saying what Carl pointed out, is that the maritime prepositioned forces have doubled the capability to respond in the Atlantic and the Pacific. It is one of the best investments I think we have made.

The call for a national sealift policy stems from the idea that it is a national problem. It transcends way beyond the Navy; it is a national problem. You have problems with the unions. You have problems with the law. You have problems with commercial shipping.

So what we have advocated is some kind of national policy to pull us all together; this is what I believe General Cassidy, the head of the Transportation Command, has advocated as well.

So that is what we would like to see addressed at the national level; some kind of effort to streamline and develop sealift capability for the Nation that has both military and commercial benefit over the long haul.

Secretary GARRETT. I agree with that, Senator. I think, just to reemphasize the point that I think has been made, that is, that the Navy has accomplished a great deal over the last 9 years with the help of Congress in spending almost $7 billion and increasing their capability.

Whether or not we have reached the desired capability in an all-out wartime footing is another question, but as opposed to the plans that have come out of all of the studies that have been ongoing, as Admiral Trost points out, we have a shortfall in only the capacity to carry unit equipment, the tanks and heavy items like that, and we are only a few percentage points below the goal that was set early on.

I think we need to, as General Gray points out, treat this as a national problem because clearly it is that and we need a national policy.

General **Gray**. It is also important to match the lift requirement with what is in the barn, and some people act like there is more in the barn than there is. I think it needs a degree of synergism here to make the tough decisions.

Senator **Cochran**. I appreciate your comments about that. It concerns me that we talk about a problem. If it is a problem, we need to start doing something about it. If a program needs to be developed or we need to get together and pull all of our resources together and think through it and develop a national policy, I think that ought to be done too.

Admiral **Trost**. If I may, Senator. It is correct for us to say that we have taken major steps to resolve the problem, and I do not want my comments to overshadow the need for a national policy. Right now we have got a lot of ships that we bought which are highly usable, but without an adequate maritime industry, we do not have the people to man those ships or the capability to rapidly pull them out of mothballs, or whatever their readiness status happens to be, to get them ready to sail.

Right now the maritime repair industry and the shipbuilding industry in this country are almost totally dependent on the Government. We are the only people ordering new ships from our shipyards. We provide more than 75 percent of the repair work to U.S. shipyards, and the maritime unions are not only shrinking in size but the people in those unions increasingly are people who are out there operating diesel-powered ships when the bulk of what we have are steam-powered.

So trained operators in adequate numbers as well as in skills becomes an issue. We do have a national problem that should concern us as we go forward.

STRATEGIC HOMEPORTING

Senator **Cochran**. One other item. I do not want to dominate the hearing here. Part of the Secretary's statement that deals with strategic homeporting was of interest to me. In my State a good deal of money and resources and energy have been expended in making ready the port at Pascagoula for strategic homeport facility.

I notice that there have been some changes in the plans that have occurred over the last year or two and that a few of the planned port developments have been cancelled and some other shifting and readjustment has taken place that have affected other areas, not Mississippi.

I am curious, though, to what extent do you see the need for any further readjustments of the previous plans? I would think it would be unconscionable to wake up one morning and read that someone was suggesting that Pascagoula was going to be cancelled as a strategic home port after road work has been done and all kinds of activity involving a total community effort had been undertaken to make this a successful move and help contribute really to the cost of a new port for the Navy.

What is your reaction to that situation?

Secretary GARRETT. If I may, I will let the CNO address the operational aspects. My own view is that the need for dispersal has not lessened. The closures that you refer to of course were as a result of the recommendations of the Base Closure Commission. I personally feel a commitment to those communities that have come on board and have worked closely with the Navy and made those sacrifices to which you refer to hold to our original plans to the degree that the budget allows us, Senator.

I think again I worry about the targets in 1991 and 1992 and what we are going to have left to work with. I have learned over my short time here that there is only one constant around, and that is change. It seems to be present in the Navy to a great degree.

But the basic underlying philosophy from my point of view has not changed and we will work to carry that out. But I have to caveat that with the realities that we face as the top line continues to come down.

Admiral TROST. I would essentially note that there has been no change in the operational requirement for additional homeporting. We have the ships. They have to have a place to go, and the sites that were selected were selected on a very logical basis. Nothing has changed.

NAVY RECRUITING

Senator COCHRAN. I was glad to see in one statement that the Navy had met its recruiting goals for the ninth straight year. I think you are to be congratulated for that. I think it is a tough job that you face in competing with other services and also it appears when we have a strong economy and a lot of jobs are being created in the private sector that are very attractive and very rewarding in many ways, financially and otherwise, I worry that in the Navy, because of overseas deployments and long time at sea requirements, such as the situation that we had in the Persian Gulf, it may be harder and harder to retain those that are being recruited when they find they are separated from their families for such long periods of time.

Is it necessary, given the fact that we see the situation in the Middle East stabilized, comparatively speaking, with what it was during the Iran-Iraq war and the situation in terms of the Iranian threat, which caused us to have to have ships deployed in the general Arabian Sea area for long periods of time, do we see any relief that we can give to our sailors and our ships?

Can we draw down the numbers that we have deployed in those overseas stations so that we minimize the impact on families and stress on sailors with these long deployments at sea?

Secretary GARRETT. Senator, if I may address that briefly and then ask the CNO and possibly the Commandant to add to it, I am concerned because of the major force structure cuts that we have taken that we may find ourselves with just the opposite problem as far as cutting back on deployments, depending on the world situation.

I look at these periods of stabilization with a very jaundiced eye. They come and they go and it is a very passive thing. But I remember very well the Cuban missile crisis when everyone uprooted on a Monday morning and we all got under way. Early in 1965 the same thing happened in Vietnam. It happened in the Persian Gulf and if history is any indicator it will happen again.

So I see our task as a very difficult task, to maintain what we have, but I think we can do it. We will certainly work very hard to do it. But, as you know and I think everyone on the committee knows, the very nature of sea duty is a very arduous business, difficult, and that has been pointed out I think rather poignantly. Not only is it inherently dangerous, but the associated family separation is one of our biggest retention problems.

It will continue to be. It has been in the 30 years that I have been associated with the Navy. But with the help of the Congress in protecting again what we have achieved, and to help us to maintain our credibility with our people as we face these very difficult times, I think we can maintain what we have had for these many years.

I thank you very much for the recognition. There are an awful lot of people working awfully hard every day in the Navy throughout the world to maintain that retention. We, as I say, have our work cut out for us, but we will continue to press on as we have. We are going to need your help, however.

PERSIAN GULF FORCE LEVELS

Admiral TROST. You asked whether there were specific steps being taken with respect to the Middle East. We have, of course, drawn down our force levels there considerably, and we relaxed the requirement also for battle group support in that area.

Three of the minesweepers that limped out there in 1987 from the Atlantic fleet—and I use the term limped advisedly—have steamed home all the way under their own power just this last week, well, about a week ago, as a matter of fact.

Secretary GARRETT. They came back on May 25 after a 58-day transit.

Admiral TROST. So they in fact spent a lot of time out there but they probably brought those ships home in far better shape than they were in when they sailed. These are ships that are 35 years old.

Now we can draw down force levels and we can alleviate that burden. That burden was out of hide in addition to other commitments that were never reduced. We do have the problem of reduced force levels facing us in the near term. We do have the continuing challenge of maintaining that level of satisfaction for our people that will keep them around.

Right now we are doing pretty well with retention. People recognize what they are doing and recognize its importance. Congress has been very supportive with quality of life factors as well as selective reenlistment bonuses and the other kinds of entitlements that it takes to retain these skilled people, especially in the face of today's economic conditions.

We know we are going to continue to face that challenge. That is why you will continue to see us coming up here and saying that people come first because we cannot afford to lose them. We need that skilled, trained force and we need them in adequate numbers in order to do the job that we are given, because we are going to be called on day after day after day and we know it.

Senator COCHRAN. Thank you, Mr. Chairman, for your indulgence.

CORAL SEA/MIDWAY RETIREMENT

Senator STEVENS [presiding]. Thank you, Senator.

Gentlemen, I am one who has supported the concept of the arms control negotiations, been involved with it since its inception, and I support what the President is doing. But as I see what is happening now we are seeing a shift from the European theater to the Pacific theater—the move of the Soviet forces to the Pacific.

Even the President's recent announcement covers the concept of the Soviets' reduction in forces to the Urals. East of the Urals is a vast area that we are familiar with up where I live, and I know you all are familiar with what is going on up there, too.

But with that preface I just want to ask you. I understand you are going to retire the *Coral Sea* and the *Midway*. Does that mean that there will be no forward deployment in Japan of any aircraft carrier? What will replace the *Midway*?

Admiral TROST. No, sir; we are engaged in discussions with the Japanese to homeport a replacement carrier there, when the *Midway* retires as the *George Washington* comes into the inventory in 1992. We do plan to maintain a continued forward-deployed carrier.

Secretary GARRETT. A more capable forward-deployed carrier, Senator.

Senator STEVENS. Well, I know that you gentlemen have been very astute about the exercises you have carried on in the North Pacific and really the total aspect of showing the flag in the North Pacific. But I wonder now if as a result of what is happening there will not be a greater demand on the Navy to be present in the Atlantic.

Admiral TROST. I foresee a greater demand for naval forces in the ensuing decade as we have fewer countries willing to have our forces stationed in them and as our access to bases continues to decline. So I think you are right in projecting or foreseeing a greater burden around the globe.

I do not think we can afford to reduce the ratio of Atlantic to Pacific presence or, I should say, Pacific to Atlantic presence in view of the increasing economic importance of trade in the Pacific to this country and the fact that the Soviet Union, our greatest potential threat, continues to station very considerable and qualitatively improved naval forces in the northwest Pacific.

BURDEN SHARING

Senator STEVENS. Well, then that brings me to another. I am trying to get to a point here sometime. In terms of the European presence with NATO and with the host nation support and tremendous other number of contributions that NATO allies have made during the period of great importance of the NATO deterrent—and I think it is still important but it is obviously going to come down—there was a substantial contribution from our allies in maintaining that effort.

I am one who believes that the whole focus now of the collision in at least planning between the Soviet Union and the United States is swinging to the Pacific. As I look at it, I do not see much help from Korea, and I see none really from the Japanese.

If you really analyze what they have done, they have spent a lot of money but they use it to build buildings in Okinawa that the government rents and they built ports in Japan that the United States rents. I do not see the same kind of contribution forthcoming now for this new era from the Japanese and the Koreans that we have had, although even that some of us on this committee have complained has not been sufficient, from our European allies.

The level of contribution for mutual defense of the Pacific has been nil because of some myths that came out of Japan from the McArthur days. There is no limit of 1 percent in any law or any constitution or anything else in Japan, and yet they maintain that myth. Being a World War II type, I am not so sure I want to see the Japanese rearm, but I would like to see them be greater partners in the defense of the Pacific.

Can you envision that coming now?

Admiral TROST. I share a slightly different point of view as to the level of contribution, but I think the real key is your final statement. No one wants to see the Japanese rearm to the extent that they become a threat to any of their neighbors or to those people in southeast Asia who still remember World War II very well.

The Japanese contribution currently, from my perspective, is most significantly the capability it represents to complement our naval, our maritime force capability as well as our air defense capability in that particular region.

They have done, in my view, a very good job in building naval forces which are complementary to our own. We want them to be complementary because we do not want that independent capability, stand-alone capability, nor do their neighbors.

They have done a reasonable job in their air defense capability development. They do provide a very considerable amount of monetary support to our forward-deployed forces, to the extent of about $45,000 a year per individual stationed on Okinawa and the Japanese mainland, according to Mike Mansfield.

I believe that contribution is best put in perspective when we look at it as a contribution that matches the two largest NATO countries, non-United States, and their dollar amounts spent on defense.

Senator **Stevens**. But, Admiral, that is a different thing. You know, you go to Europe and the European community welcomes our people on an integrated basis into Europe. In Japan, as I look at your installations in Japan, you have everything on base. There is no assimilation out in the Japanese culture of the American service people.

You have got everything on base from dental clinics to barber shops to beauty shops to shopping centers. Everything is on base. They have been very helpful in building dental buildings and medical buildings and everything else for us to rent, but again that shows up in their military budget.

When I analyzed it, it was in their military budget, not in their government budget, and we are looking at that as being a contribution to mutual security. It is not. It is an investment just like any other investment that the Japanese make for a return on their dollar.

Now what worries me is that if we look at the Japanese now in particular as far as our continued presence there, we will not have the same kind of local civilian support that we have had in Europe. It is going to be a continuing increased expense to keep our people in Japan under the current conditions, and unless there is some change there is going to be an increased demand to pull them out of there, which worries me.

Admiral **Trost**. Well, it worries me.

Senator **Stevens**. I have not made any demand to pull them out of there. This committee, when I was chairman of it, made demands that they try to contribute more to our mutual defense, not that we should not be forward-deployed, but that they should be further partners in this defense of the Pacific. I do not see that they are.

They made their first attempt in that *Midway* situation and now I understand they are not going to be called on to spend the money anyway.

Admiral **Trost**. Probably not, but we think we might have gotten the offset anyway.

Senator **Stevens**. Well, that would be to the advantage of the Pacific if they have made a contribution.

PREPOSITIONED SHIPS

Let me go to some of the problems of that area. You are, as I see it now, really—you have prepositioned ships in Europe, right?

Admiral **Trost**. We have prepositioned ships in the Atlantic and in the Pacific.

Senator **Stevens**. You have some in the Pacific now?

Secretary **Garrett**. Yes, sir; that is right.

Senator **Stevens**. How many?

General **Gray**. Two full sets, which include the two full maritime prepositioned force sets.

Senator **Stevens**. You are talking about the ones at Okinawa?

General **Gray**. No; they are at sea. There are two in the Pacific and one in the Atlantic. They each carry 30 days of supply and equipment and sustainment to support a marine expeditionary brigade of 17,500 people. It is a very significant increase in capability.

As I said earlier, sir, it doubles the capability to go to war in each ocean or keep the peace.

Admiral **Trost**. The bulk of the other prepositioned ships support Army, Air Force, and, to a very minor degree, Navy, and are also in the Pacific and Indian Oceans.

Senator **Stevens**. I am going to submit a bunch of questions. They have just told me that I have got to go over there and help defend against an amendment that affects our portion of that bill over there.

I particularly am concerned about the V-22, which I understand Senator Specter did raise and we all know. I would hope there would be some way to have a revisiting of that after we are able to mark up the bill here. It does seem that we should have some way to carry on that basic change in aviation capability. I think, General Gray, you have made the case very well for us.

BATTLESHIP RETIREMENT

As I said yesterday, I am not going to rerun the battleship concept, but let me ask you, are there any plans to retire any of the battleships that are out there now?

Secretary **Garrett** No, sir.

SEALIFT/CINC'S

Senator **Stevens**. Secretary Garrett, let me ask you a specific question before I go, and that is concerning sealift. What do the regional CINC's think about the adequacy of sealift for their needs?

Secretary **Garrett**. I think the CNO may be better prepared to answer that question. In my conversations at the DRB I think that they, almost to a CINC, if I may, Admiral Trost, desire more sealift at this point in time.

But I get back to the point that we made earlier. We have worked very hard and continue to work in that direction.

Admiral **Trost**. That is accurate. In the DRB discussions two things came out. One, I think, was a lack of realization by some of the CINC's of the amount of effort that had gone into providing sealift in this past decade. The other was a desire to have a capability which we will never be able to meet because ships cannot fly and airplanes cannot carry the volume necessary to provide the overseas support.

So there is a lot of handwringing by the CINC's and by others about our inability to provide fast sealift. Fast sealift, no matter how it is described, cuts a matter of hours or maybe a day or two, maximum, from delivery time, and by and large has less significance than the ability actually to get the equipment in hand and get it properly packaged to a port of embarkation in time.

So I think the CINC's would generally say that they would like more than they have, but I think most of them would also recognize that what we have now does fill the job fairly well in almost all areas.

General **Gray**. I would add that the CINC's always want more airlift and more sealift and they offer up nothing to help get to that goal; that is the dilemma of the Joint Chiefs.

Secretary **Garrett** But I would add, if I may, as the Secretary charged with equipping the forces, I fully understand that desire and that need. I mean, their concerns are somewhat different from ours as we look long range. They have to be worried about tomorrow and next month.

So I think that kind of concern is healthy and it keeps those of us who must address these concerns on our toes in attempting to meet those needs in the long term.

Senator **Stevens**. Well, for 6 years as chairman of this subcommittee and chairman of the Merchant Marine Subcommittee at Commerce I tried to solve that problem, but I think that the difficulty really lies not in the military but in the conflict within the private sector and the unwillingness to take on any change that is really national security oriented.

I am not sure we are going to meet that sealift capability through a period of decreasing military expenditures unless we have a greater degree of cooperation from the private sector. In the final analysis there is no real reserve strength out there the way there is in the airline industry, and that is the big problem.

ADDITIONAL COMMITTEE QUESTIONS

Gentlemen, I appreciate your courtesy. We thank you all for coming. It is the chairman's desire to work closely with you as we work on this 1990 budget, and I share that approach.

We will submit some questions to be answered for the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

SEALIFT

QUESTION: Secretary Garrett, the Commanders in Chief, the Army Secretary and Chief of Staff, and several members of this subcommittee have expressed grave concerns during our hearings throughout this year that our sealift capacity is woefully inadequate to support our national objectives.

It would seem logical that this subcommittee should initiate procurement of dedicated sealift vessels to alleviate this shortfall. As secretary of the Navy do you believe this would be a proper approach to redress this imbalance?

ANSWER: It would be premature to initiate additional procurement of dedicated sealift vessels. The Department of Transportation intends to procure additional sealift ships for the Ready Reserve Force with FY 1990 funds, if those funds are appropriated by the Congress. The Administration is currently developing a national sealift policy. When this policy is signed by the President, work will begin to define any new sealift programs necessary to implement the policy.

QUESTION: Secretary Garrett, can you state with conviction that the Navy is doing all that it should for sealift?

Mr. Secretary, if the Navy does not provide more funding for sealift, how will improvements be made in our capability to move troops, military equipment and supplies?

ANSWER: The Navy has carefully balanced its allocation of resources among all of its functions, including sealift. Military sealift capability is constantly being improved through Navy sealift support programs and the Ready Reserve Force program of the Department of Transportation. Additional Navy funding for Sealift should depend upon the need as defined by goals in the forthcoming National Sealift Policy.

RETENTION/RECRUITMENT

Question: General Gray, the Marine Corps has experienced much better pilot retention than the Navy. The Navy has found it necessary to pay pilot retention bonuses to keep pilots while the Marine Corps has not.

Obviously, the Marines have found solutions without simply arguing more money is needed. In your opinion, why are Marine pilots willing to stay in the Corps while Navy and Air Force pilots are leaving their services?

Answer: The Marine Corps has enjoyed satisfactory pilot retention since Fiscal Year 1983 even though our pilot retention rates have been comparable to the Navy's for this period.

This can be explained in part by the fact that our retention rate requirements are lower than the other Services, primarily because the Marine Corps

pilot grade structure is less heavily weighted in the field grades (majors and lieutenant colonels) than our sister Services.

Marine Corps aviator retention improved dramatically in the early to mid-1980's as the result of a combination of factors all working to improve retention. Foremost on the list, was the significant increase in Aviation Career Incentive Pay (ACIP) approved by the Congress at that time. At the same time we experienced a significant decline in the National economy and a corresponding sudden drop in the number of airline pilot hires per year. One last factor that contributed to better retention was the fact that we also paid aviator retention bonuses in FY's 81, 82 and 84. The resulting sustained improvement in aviator retention occurred faster than we could react with confidence to reduce our pilot production plans. As a result, we over-produced pilots in FY's 82 and 83 creating excesses in aviator populations in specific years of commissioned service (YCS). Unfortunately, just as we completed the painful process of forced reductions of the aviators in the YCS's that were in excess, based on our projections of continued high retention, our aviator retention rates turned downward and the current Marine Corps pilot retention trends remain lower than desired.

Since 1 October 1988, a small shortfall of Marine Corps pilots has slowly developed to the point that we are now short 146 company grade pilots. Although that only equates to about 6% of the total company grade pilot requirement, this decline in the pilot inventory is cause for concern, and will result in an increased shortfall this fiscal year and beyond, unless retention is improved.

PILOT RETENTION

QUESTION: Admiral Trost, why do you believe that Navy aviators require pay bonuses to stay in the service while Marine Corps pilots do not?

ANSWER: The payment of bonuses within the Navy is based on requirements versus inventory. The retention rate is the critical element in that equation. The same is true for the Marine Corps. In 1981, 1982, and 1984, the Marine Corps did pay bonuses to pilots and NFOs when their overall retention rate was insufficient to meet their retention requirements. Today, the Marine Corps is again considering the payment of bonuses to pilots and NFOs in some communities as again their retention rate has fallen short of their requirements.

NAVY ACQUISITION GOALS

QUESTION: Admiral Trost, since we are cutting the number of carrier battle groups and the number of combatants per battle group, as you remark in your statement, why can't the acquisition of AEGIS ships be reduced below the level of five per year?

ANSWER: The Navy's most critical force structure shortfall remains modern AAW combatants (Battle Force Capable Ships). We are presently at only 64% of our requirement and will fall to 46% by FY 93. In addition to the early retirement of the DDG 2/37 Class AAW destroyers, we are also facing the prospective retirement of CG 16 Class AAW cruisers in 1999. We need five to six DDG 51's per year to overcome this shortfall. The force level of ships is determined by the number of ships built per year times the service life. Therefore, at the present rate of five ships per year, we cannot expect to achieve our force level goal of 224 ships; but we will be able to replace those ships we are retiring by the late 1990's.

QUESTION: What are the cost savings associated with buying five versus four DDG 51s per year? Please justify your response.

ANSWER:
Construction Profile

	FY90	FY91	FY92	FY93	FY94	FY95	TOTAL QTY	TOTAL ($B)
Jan FYDP	5	5	5	5	4	—	24	$17.7
4/Year	4	4	4	4	4	4	24	$18.7
DELTA	-1	-1	-1	-1	—	+4	—	($1.0)

The cost savings of buying five versus four DDG's per year is approximately $1 Billion. The total 24 ship procurement cost submitted in the President's Budget was $17.7B. It incorporated projected savings based on multiyear procurement. The total cost of procuring the same 24 ships at a rate of four per year, over a six year period, is $18.7B. This represents an increase of over 5% to the total and average unit cost, and is greater than the cost of one ship. The increased costs are attributable to:

o Program Stretchout. If the 24 ship program presented in FYDP (FY90-FY94) is stretched an additional year (through FY95) the slope of the learning curve is reduced and escalation costs increase.

o Competition. Five ships per year are the minimum level to economically sustain two shipyards. Each of the present yards is capable of building at least three Destroyers per year. Less than five ships per year reduces competition. (Neither yard can remain viable with only one ship award per year over an extended period. Maintenance of industrial mobilization base is a high priority.)

o Acquisition Strategy. With only four systems per year, multiyear procurement is a less viable acquisition strategy, the alternative, annual procurement with options, will yield less savings and provide fewer incentives to the shipyards to accept the higher degree of risk should outyear quantities by reduced.

o Economies of Scale. Four ships versus five per year reduces economies of scale. Fixed shipyard and GFE vendor overhead costs will be distributed among fewer units over a longer period of time and unit costs are driven higher.

QUESTION: I understand your planned goal for AEGIS destroyers was 29 when we were planning a 600 ship Navy with 15 carriers in FY-87. Why with lower forces is the number of DDG's at a higher level?

ANSWER: The number 29 has been taken out of context. It is not related to the 600 ship/15 carrier battle group goal. The 29 AEGIS destroyers refers to an earlier decision to replace the DDG 2 and 37 Class destroyers. In order to take advantage of the significant savings associated with serial production and block upgrades,an improved version of the DDG 51, designated "Flight III" , will be built as a replacement for the CG 16 and 26 Class cruisers. In that the Navy's most serious force structure shortfall is AAW battle force capable combatants, this acquisition strategy avoids the significant time delays and start up costs of a new ship program, thereby getting these vital ships into the fleet sooner and in the greater numbers required. Our objective is to continue to build five to six DDG's per year until force level goals are attained.

F-14 NAVY ACQUISITION GOALS

QUESTION: There have been published reports that a surplus of F-14s exist. Is this based on a 15 carrier air wing force?

ANSWER: Presently, a small F-14 surplus as measured against the program objectives in the Naval Aviation Requirements Report exists. This is primarily due to the decision to transition from 12 to 10 plane F-14 squadrons and the fact that two existing active airwings are not scheduled to transition to F-14 until 1992. However, based on no new F-14D production there is a substantial loss to our inventory after 1998. This inventory shortfall will not be corrected until NATF has entered the fleet in significant numbers. This currently existing small surplus is the minimum requirement necessary to cover attrition and retirement until the NATF becomes operational. Furthermore, these aircraft will be required to minimize the impact of the remanufacture program on fleet operations.

FIFTEEN CARRIER AIR WINGS

QUESTION: Admiral, why are 15 carrier air wings required to support 14 carriers?

ANSWER: We support 14 deployable carriers with 13 active air wings and 2 reserve air wings that are available for mobilization during times of national emergency. Due to our current and projected maintenance schedule (SLEP, overhaul, refueling), we must maintain a balanced number of active air wings and aircraft carriers in our deployment/training cycle. Through careful planning, we are able to maintain the requisite flexibility during peacetime to forward deploy our carriers in a manner consistent with operational and personnel tempo considerations.

TACIT RAINBOW

QUESTION: Now that the Navy has deferred or ended its participation in the TACIT RAINBOW program, what will be the additional costs associated with increased procurement of HARM missiles to compensate for any shortages in radar killing missiles?

ANSWER: The total inventory requirement of HARM was decremented in 1987 to adjust for the planned inventory of TACIT RAINBOW. Concurrently, the modeling of defense suppression within the Navy and Marine Ordnance Requirements model was refined resulting in another upward adjustment to the HARM inventory. No attempt was made to break out the effects of these two changes at that time. The Navy's Non-Nuclear Ordnance Requirements planning process is presently in its annual update which will reflect the increase in HARM inventory requirements needed to compensate for the cancellation of TACIT RAINBOW. When that analysis is complete, I will provide you with that information.

QUESTION: What are the military impacts of the Navy's deferral or withdrawal from the TACIT RAINBOW program? Did the Navy do a detailed cost- and military-effectiveness analysis of the military and fiscal impact of its deferral or withdrawal from the TACIT RAINBOW program before deciding to do so?

ANSWER: Our present understanding of the effectiveness of TACIT RAINBOW and its synergistic effects with HARM are that TACIT RAINBOW contributes to increased HARM effectiveness and increased survivability of strike aircraft. This increase in effectiveness results from enemy radar destruction and air defense system saturation. Additionally, it causes ordnance drawdown; i.e., the expenditure of anti-air missiles against TACIT RAINBOW because it cannot be differentiated from a strike aircraft or anti-ship missile. It is not yet clear that TACIT RAINBOW is the only option available to the Navy to provide saturation and ordnance drawdown capabilities. However, because our understanding of TACIT RAINBOW and its performance is still rudimentary, it is too early to state definitively that the impact of the loss of TACIT RAINBOW from the inventory will have a major impact. Severe funding constraints require funding only one ARM weapon. The decision to terminate Navy's participation in the TACIT RAINBOW program was based on the determination that HARM is a proven weapon and is in production today. Funding HARM vice TACIT RAINBOW is the best option for the Department of the Navy.

QUESTION: The Navy has been planning to procure about 7,000-13,000 TACIT RAINBOW missiles--each for about half the cost of procuring HARM missiles. If the Navy could not afford to procure TACIT RAINBOW missiles, how can it afford to acquire enough HARM missiles to compensate for ending the TACIT RAINBOW program?

ANSWER: TACIT RAINBOW is still early in its production efforts, and would not start delivering Navy missiles until 1994. Given that and the fact that HARM is in production with competition of the guidance section planned for FY 1992, HARMs would be procured by continuing the HARM program beyond its planned termination date rather than increasing near term HARM buys. We are reviewing options to meet our requirements in the most economical manner.

QUESTION: Descriptions about the Navy's position on TACIT RAINBOW are unclear. Is the Navy simply deferring, or ending, its participation in the program? If the testing program demonstrates improvements in TACIT RAINBOW's performance, will the Navy reconsider its decision whether to participate in the program?

ANSWER: The budget submitted ended our participation in the TACIT RAINBOW program. That decision was made in response to an urgent deadline, as well as TACIT RAINBOW development problems. We will continue to review all options during the normal budget review cycle. The Navy intends to review its decision to participate in the TACIT RAINBOW program, as well as other warfighting options to counter enemy air defenses. Demonstrated improvements in missile performance will have an impact on that review.

NAVY STRATEGIC FORCES AFTER A STRATEGIC ARMS REDUCTION TREATY

Question: Admiral Trost, your prepared statement highlights the contributions the Navy will make to our strategic nuclear deterrent forces after a potential Strategic Arms Reduction Treaty (START) is signed with the Soviet Union -- TRIDENT submarines with D-5 and C-4 missiles.

How many TRIDENT submarines with D-5 missiles does the Navy think should be part of any post-START Treaty U.S. strategic deterrent TRIAD?

Follow-up Questions:

1) Your statement claims that the TRIDENT/D-5 system is likely to remain the most cost-effective and survivable element of the strategic TRIAD under any potential START Treaty.

What specific evidence can you provide at this time to support this statement, especially in view of the Air Force's claims about the cost-effectiveness of land-based missiles and manned penetrating bombers?

2) What special analyses has the Navy done which would demonstrate the relative cost-effectiveness of the various components of the strategic TRIAD or would provide examples of various strategic force structure options and costs under a START Treaty?

Can you summarize the principal conclusions of these studies at this time, and provide the studies for the record?

Answer: The Navy's plan to build a minimum of 21 operational TRIDENTs is based upon appropriate, time-phased replacement of retiring SSBNs. We believe that it would be premature to define a specific force structure now since this would preempt our START negotiators. Prudence dictates that such a decision process should be evolutionary in nature and based on current threat assessment, evaluation of technological advances and fiscal realities. We believe that survivable SSBNs must provide a significant share of our nation's future deterrent capability. It is, therefore, to our advantage to carry out the President's Strategic Modernization Program by continuing to build one TRIDENT submarine per year.

The inherent survivability of the deployed SSBN force and the cost-effectiveness of fully loaded TRIDENT SSBNs makes the TRIDENT system a uniquely attractive element of our modernized strategic force options. Navy analyses show that in a day-to-day/delayed response scenario, the 10-year cost per arriving warhead for fully modernized SLBM, ICBM and bomber forces is $20M, $100M and $100-500M, respectively. In the generated/prompt response scenario the costs for those same weapons systems are $15M, $44M and $32M, respectively. With R&D complete, well-defined costs, and TRIDENT procurement continuing at one-per-year, total cost is projected to remain essentially steady at about $5B with no growth over the FYDP.

SHIP ACCIDENTS

QUESTION: Admiral Trost, it seems like each day we are hearing about an accident involving a Navy ship or Marine helicopter. Recent accidents such as the explosion on the IOWA, the fire on the WHITE PLAINS, and the crash of a CH-53 helicopter off Okinawa this week come to mind.

What's going on -- is there an increase in the number of accidents or are more simply being reported in the press? Is this just chance or are we seeing the impact of inadequate repair, modernization or training?

ANSWER: Despite the tragic events of the past few months, during which time we suffered personnel casualties due to shipboard explosions and fires, the Navy Fleet has in recent years made significant progress towards achieving a safer working and living environment for personnel.

The recent series of shipboard accidents contrasts sharply with the past six years, when we experienced a dramatic decrease in the number of accidental shipboard fatalities and a three year decline in the number of major shipboard accidents. Also, it should be noted that shipboard accidents account for less than three percent of all Navy non-combat fatalities, whereas motor vehicle accidents contribute over 51 percent.

I cannot speculate on specifics of the incidents cited because the investigations are still open, but we do know that the causes and circumstances of the recent explosion, fires and aircraft crash are very different. The investigations, which are routinely conducted after a major accident such as the WHITE PLAINS fire or crash of the CH-53 helicopter on Okinawa, will tell us whether there are equipment malfunctions or procedural deficiencies to be resolved.

With regard to press reporting, I believe the IOWA explosion, because of the nature of the incident, may have focused more media attention on subsequent accidents than otherwise would have happened. However, my concern is not with press coverage, but instead with preventing accidents and providing a safe operating environment for our men and women.

As I mentioned, we have experienced decreases in major shipboard accidents and fatalities in recent years. Also, 1988 was the safest year in Navy aviation history. I believe this is the result of a Fleet-wide program to increase safety awareness, improve training and better equip our shipboard personnel. We have significantly reduced the number of fires and floodings and improved our ability to prevent or limit damage when accidents do occur. Improved capabilities in firefighting, damage control and personnel protection are the result of lessons learned in the Falkland Islands, USS STARK, and USS ROBERTS incidents.

QUESTION: Admiral Trost, I appreciate the sensitivity of this question, but, could you give us a status report on the accident investigation regarding the IOWA?

ANSWER: Immediately upon learning of the tragic accident on the USS IOWA, the Commander, Surface Force, U.S. Atlantic Fleet, convened an investigation pursuant to the procedures set out in the Manual of the Judge Advocate General (JAGMAN). The investigating officer and his team of experts have spent several weeks interviewing witnesses and assessing the situation. It is my understanding that their findings of fact, opinions, and recommendations will be submitted shortly to the convening authority for endorsement to me via the Commander in Chief, U.S. Atlantic Fleet. The process has been delayed to allow completion of an investigation by the Naval Investigative Service (NIS) into allegations of misconduct, which came to the attention of the convening authority after the JAGMAN investigation had commenced. The results of the NIS investigation will be referenced in the JAGMAN report when it is forwarded to the convening authority. Once I have reviewed the report, I will provide briefings for appropriate congressional committees, as requested.

QUESTION: Admiral, you refer briefly to these studies (the National Academy of Science's Navy 21 study, the Center for Naval Analyses' Quo Vadis study, and your own Long Range Planning Group's Long Range Assessment) in your prepared statement. Could you highlight the major conclusions of each of these studies, and how specific implementation of these results is reflected in the fiscal 1990 budget now before Congress?

ANSWER: The principal conclusions of the three studies were as follows:

NAVY 21: Macro themes were:

—Expanding battle space requires operational force integration, low-observability is an important feature

—Critical dependence on surveillance and connectivity

—Increasing importance of space

—Changed qualities of surface forces

—Potential for increased use of submarines for tactical strike missions

—SSBN's increasingly important as a viable strategic force

—Changes to amphibious force design and operations

—Available manpower will necessitate more automation, different training

Quo Vadis: Identified the priority of major RDT&E systems in the POM in terms of the war-fighting value of the investment, major impact technologies both mature and emerging, and immature which could have major affect on Navy war-fighting.

Long Range Assessment: Major judgments reached were:

—Information and control of that information will dominate warfare

—Global surveillance will be a routine feature of military operations

—Significant portions of U.S. and opposing forces will incorporate stealth technology

—Maritime warfare battle space will continue to expand as a result of pervasive surveillance and long-range weapon capabilities while individual self-protection battle space will be reduced by stealthy weapons

—Space will become part of the maritime battlefield

—Precision-guided long-range and other stand-off weapons are increasingly important

The implementation of these studies in budget realization is a process that will require a decade or more. Some of the results have influenced our 6.1, 6.2, and 6.3A investment strategy for 1990, and will continue to influence our investments in science and technology throughout this century.

THE NAVY OF THE FUTURE—RESULTS OF NEW LONG RANGE ASSESSMENTS

QUESTION: What major reallocations of resources among functional research areas and programs were made in drafting, and then revising, the fiscal 1990 budget request to implement these study recommendations?

ANSWER: The results of Quo Vadis, being more near term, gave specific recommendations for the priorities of various systems in the current Navy RDT&E POM. These priority recommendations, although only advisory, were one consideration in the formulation and in the revision of the fiscal 1990 RDT&E budget request. In addition, key elements of the recommendations of NAVY 21 and Quo Vadis were included in the Tech Base Guidance issued by OPNAV to the Chief of Naval Research, and these requirements were implemented in the fiscal 1990 budget request for 6.1 and 6.2. Further, two Advanced Technology Demonstration projects are planned for start in 1990 which will reduce the implementation risk of concepts embodied in these studies.

QUESTION: What assurances can you provide that the Navy has established sufficient program review and implementation procedures to ensure sustained implementation of the results of these studies.

ANSWER: We have briefed the results of these studies to the CINC's and very widely to industry so that they will know the direction the Navy is working toward. The results of the studies have been incorporated in the Science and Technology Planning Guidance that OP-098 issues to industry and the labs, and in the Tech Base Guidance which is issued to the Chief of Naval Research (CNR) to guide 6.1 and 6.2 investments.

We have formed an OPNAV Science & Technology Requirements Panel which reviews the CNR's program for conformance to the OPNAV guidance. A recent review of the

CNR program reveals that his investment is responsive to the core technologies identified in these studies. Our Advanced Technology Demonstration program is seeking the key demonstrations required to reduce the risk of putting these technologies into systems, and specific long-range platform planning studies are examining detailed implementation of these technologies. We have initiated a set of Technology Initiative War Games at the Naval War College to investigate the tactical ramifications of using the target technologies.

Our Long Range Assessment is one tool that we will use to monitor progress towards the implementation of these technologies.

Although these studies have already influenced our tech base investments, the specific systems implementation of the results of these studies will be more measured. Some will require validation of their warfighting effectiveness; various detailed studies and technology demonstrations will examine these questions.

A major influence on the implementation will be the budget process and the levels assigned to the Navy in the rest of this century. We have a review process that incorporates specific guidance from CNO and SECNAV that assures an appropriate long range RDT&E investment strategy. However, the current Naval force commitments and the future budget allocations to Navy will influence the rate at which the investments that result from these studies reach the fleet.

Navy Anti-Submarine Warfare (ASW) Research-Scope Direction

A recent report by a respected advisory panel on anti-submarine warfare to the House Armed Services Committee concluded that the Navy's current submarine technology program is unduly restricted to issues relating to the design of its forthcoming class of submarines, the SSN-21. The panel recommended that more effort on research and development applicable to later submarine designs is equally warranted.

QUESTION: Does the Navy agree with this panel's conclusion? Has the Navy modified its fiscal 1990 budget request to accommodate the panel's concern.

ANSWER: During the development of the SSN-21, the Navy correctly emphasized an aggressive research and development program that would ensure that this submarine class included every possible technological advantage. Our on-going assessments of the SSN-21 program show that this research and development effort will produce a submarine that is superior to any projected threat.

The SSN-21 is six years away from initial operational capability, but we are working very hard at the technologies that might be included in the next class of submarines. We have established within the Naval Sea Systems Command a single office, headed by a flag officer (RADM T. W. Evans), to centralize the management of advanced submarine research and development. This office is using all possible sources of input to identify the most promising technologies. These include industry, academia, and Navy laboratories. The level of funding for this effort in the FY-90 budget is appropriate.

The special advisory panel further concluded that the Navy must, in effect, "start over" with new approaches to ASW. The panel stated further that more money and harder work were not enough. What is needed is an entirely new and aggressive Navy organization and way of thinking, the panel said. The latest Navy reorganization for ASW is insufficient, it indicated.

QUESTION: What is the Navy's response to this recommendation? Has it changed its organization and way of thinking about ASW research to address these latest concerns?

ANSWER: The Navy fully appreciates the magnitude of the ASW problem. We are responding to evolving ASW challenges by identifying and pursuing promising new technologies which will allow us to maintain our ASW advantage. We are making appropriate organizational changes to focus the application of scarce resources. These changes include establishing the office of the Director for ASW Development on the staff of the Assistant Secretary of the Navy (Research, Engineering, and Systems). The Director of ASW Development (RADM D.J. Wolkensdorfer) will be involved in all aspects of ASW program execution from inception as basic research through engineering development and finally, acquisition as a mature, fully developed system. He will act as Navy's central agent to ensure adequate management of ASW technology development among all platforms within Navy.

We are working closely with DARPA, the CIA, and the technical community to exploit those areas offering the greatest potential for ASW development and to ensure that all sources for technology development will be examined.

The expert panel concluded there should be better communication and coordination between the advanced submarine and ASW technologies programs undertaken by the Navy and the Defense Advance Research Projects Agency (DARPA).

QUESTION: What have the Navy and DARPA done to address this concern and ensure there is no duplication between their two research efforts?

ANSWER: The Navy and DARPA are working closely to ensure that their research and development efforts are coordinated. The Navy and DARPA are both represented on the CNO's Integrated ASW Assessment Team, Team ALFA. The Navy is well represented on the DARPA Advanced Submarine Technology Panel. It is very important to the Navy that all ASW R&D efforts address valid warfare requirements and that the most promising technologies are transitioned to the Fleet at the earliest opportunity. The Director of ASW Development will manage this overall effort for Navy R&D and all other ASW R&D efforts, including DARPA.

The expert panel concluded that the Navy's "in house" technical community of laboratories and ship yards has become too oriented toward maintenance of the existing fleet at the expense of research and development for the fleet of the future.

QUESTION: How is the Navy responding to this conclusion?

ANSWER: The Navy's "in house" technical community has a dual responsibility to provide product and technology improvement to address both current fleet problems and items for the fleet of the future. The projects currently in progress in the labs concern approximately 30% for items involving present fleet problems and 70% for items and systems under research and development. This split of emphasis between present versus future orientation among lab projects fluctuates, but to characterize the laboratory emphasis as "near term" oriented is incorrect. Naval Shipyards do not conduct research and development as one of their principal functions.

QUESTION: Secretary Garrett, this Committee always has been supportive of the Navy's efforts to repair, maintain, and modernize the fleet. We are concerned, therefore, about reports that the Navy is planning to significantly reduce its skilled workforce during the next few years--7,000 end strength during FY 1990. In my own state, based on a reduction in workload, Pearl Harbor Shipyard is facing a layoff of more than 600 skilled workers. Why is the Navy planning these reductions? What can the Committee do to ensure that these skilled workers are retained in the workforce?

ANSWER: The projected ship repair and maintenance work for naval shipyards indicates a significant decrease in workload during the early 1990's. The reductions are being driven by a maintenance strategy that relies on increased operational periods and reduced depot maintenance requirements. Naval shipyard employment is based on the amount of funded work. For the near term the reduction in the workforce will be controlled to the maximum extent possible to limit separations to those employees not directly performing ship repair work in order to retain skilled mechanics and specialized talents.

CNO maintenance strategies must be fully funded to notional cycles. More importantly, the funding must be stable to permit realistic and cost effective planning. There is a sensitive balance between the workload distribution and operating schedules that cannot tolerate funding excusions without large cost penalties.

QUESTION: Last year this Committee added $240 million above the Navy's budget request for ship maintenance and modernization. The Navy chose to only allocate $200 thousand of this increase for the Pearl Harbor Shipyard and the Pearl Harbor private sector. Secretary Garrett, why did the Navy accord Pearl Harbor such a low priority when deciding where to allocate increased ship repair?

ANSWER: The Congressional intent was to use the $240 million, split evenly between the East and West Coasts, to fund maintenance and modernization shortfalls on FY-89 scheduled availabilities. The priority for allocating funds was not based on homeport area, but on the specific requirements of individual ship availabilities. FY-89 ship availabilities scheduled for the Pearl Harbor area already had a significant portion of their repair and modernization requirements fully funded and thus did not require additional funding.

HIGH TECHNOLOGY JOBS

QUESTION: In a recent speech he made in Hawaii, Admiral David Jeremiah emphasized the need for quality education. He said that this issue bears directly on national defense because of educational requirements in an age of sophisticated weapon systems. He went on to note that today's average high school graduate reads at about the tenth-grade level and lacks acceptable skill levels in math and science.

The military is already having difficulty in recruiting and retaining enough high-quality sailors to operate the systems now in operation. Do you think it likely that you can find sufficient high-quality recruits to operate even more sophisticated equipment in the future?

ANSWER: Navy expects to be able to recruit and retain the top quality young people necessary to operate and maintain our sophisticated systems through the foreseeable future. A key element in that assumption is that adequate resourcing will be available to compete successfully with other organizations which are pursuing the same group of high quality people. As the marketable population of eligible 17 to 21 year old males decreases, competition among services is equalled only by that of competition from outside sources. Businesses are feeling the pressure and are eagerly pursuing prospective employees. Colleges and universities are becoming equally aggressive in seeking out qualified students for their freshman classes.

To remain an attractive option for employment, Navy offers a variety of interesting and professionally rewarding programs. Our technical training schools, apprenticeship programs and the new Navy College Fund (NCF) are examples of such programs. The NCF is specifically geared towards the upper mental group, high school graduate who is willing to work for a few years in a hard to fill rating in order to receive a substantial amount of assistance to attend college after separation. The NCF is being considered by Congress for FY-90. Once the funding is appropriated, Navy recruiters will be able attract qualified applicants with this excellent opportunity.

Maintaining a strong Navy image and publicizing the wealth of opportunities available in our service will require a strong and comprehensive advertising program. Providing this information to the public is vitally important to the success of the recruiting mission. In that regard, a well balanced advertising program which includes adequate national television exposure is planned and should prove highly successful for us.

QUESTION: Do you foresee a time coming when DoD will be forced to consider using less technologically advanced weaponry and equipment because the weaponry and equipment are more sophisticated than the people using and maintaining them?

ANSWER: The challenge ahead is to use advanced technology to assist in the design and human engineering and training to enable the people to operate and maintain technologically advanced weaponry and equipment.

NAVY'S TOP AVIATION PROGRAM PRIORITIES

QUESTION: Admiral Trost, the Navy's revised budget makes major changes in its tactical aircraft modernization programs. In this period of scarce defense dollars, what are the Navy's priorities among the following programs -- the A-12 Advance Tactical Aircraft, the Advanced Tactical Fighter, the A-6G, and the new procurement of F-14D's?

ANSWER: Clearly, the top priority is the A-12. Our next priority would be the EA-6B, an aircraft you did not mention for consideration but, one that is critical to CVW operations and whose inventory is dwindling with no substantive replacement on the horizon. The F-14D would be a close third and interwoven with the NATF. The A-6G would assume a lesser priority due to the IOC of its replacement, the A-12, in the near future.

QUESTION: Can you state whether the A-12 Advanced Tactical Aircraft program remains on schedule and within costs?

ANSWER: The A-12 program continues to remain on schedule and within costs.

QUESTION: Why does the Navy believe that the capabilities of the A-12 and the Navy Advanced Tactical Fighter so far exceed those of current generation aircraft as to make it worth funding the future-oriented programs while terminating the more current efforts?

ANSWER: Future oriented programs such as the A-12 and ATF incorporate technologies which will allow significant advances in performance, warfighting, and threat advantage. Technologies such as stealth, counter-stealth, super cruise, internal weapon carriage, etc, can be adapted to current fighter aircraft, but only reach their full potential by inclusion in the initial aircraft design. These technologies cannot be adapted to the 1960s era A-6 airframe which will be replaced by the A-12. Additionally, the A-12 far exceeds the A-6 in speed, payload, range, ceiling, thrust, turn-rate, will employ state-of-the-art avionics that is a full generation beyond the newer F/A-18, and will at least equal the newer F/A-18 in reliability, availability and maintainability. The full potential of these new technologies is required to allow Naval Aviation to meet the expanding threat of the 1990s and beyond.

QUESTION: Admiral Trost, the FY 1990 budget revision calls for the termination of the PHOENIX missile program in FY 1991, after producing well below the original objective of 7,000 missiles. What other missile systems are available in the Navy's inventory to satisfy long-range air-to-air fleet protection?

ANSWER: The decision to reduce long-range missile procurement is based on our current judgment of the worldwide political situation and budget environment. Other missile systems available to augment the PHOENIX are the AIM-9 SIDEWINDER and the AIM-7 SPARROW.

QUESTION: Admiral Trost, the original Navy inventory objective for the PHOENIX missile was approximately 7,000 missiles. As a result of the revised President's budget, this inventory objective has been reduced by almost 4,000 missiles. In light of this recent decision, was it a prudent investment to bring on a second-source for the PHOENIX missile?

ANSWER: The risk of conflict requiring expenditure of large quantities of long-range air-to-air missiles in the near-term is judged to be low enough to permit a reduction in the acquisition of these missiles to achieve necessary reductions in defense costs. The second-source initiative has accomplished its objective by reducing the procurement cost of the PHOENIX missile. In our judgment, we will have procured a sufficient quantity of these weapons to meet foreseeable requirements after the FY-90 buy.

PHOENIX MISSILE

QUESTION: Admiral Trost, the follow-on to the Phoenix missile, the Advanced Air-to-Air Missile (AAAM), is currently in its demonstration and validation phase. What is the current Navy estimate of the fleet deployment date of the triple "A" M?

ANSWER: The AAAM is in the first year of an estimated four-year demonstration and validation phase. The DEM/VAL will be followed by an approximate five-year full-scale engineering development leading to production and deployment about the year 2000.

QUESTION: Admiral Trost, the Navy recently completed development of an upgrade package of the PHOENIX missile which incorporates a special ECCM antenna, a high power transmitter and an expanded reprogrammable memory. In light of the recent decision to terminate the PHOENIX missile program, what will happen to this upgrade program?

ANSWER: The Navy is evaluating the requirement to improve the missiles in inventory to ensure that they remain responsive to the threat throughout their expected service life. That evaluation is not yet complete.

M1A1 TANK

Question: General Gray, the Marine Corps intends to buy a total of 410 M1A1 tanks over the two year period FY 1990 and FY 1991. Why does the Marine Corps want the M1A1 version rather than the M1A2 series due for production in FY 1992?

Answer: The Marine Corps requires immediate replacement of its obsolete fleet of M60A1 Rise Passive tanks which lacks the firepower and survivability to defeat the threat. The FY 90/91 Presidential Budget Submit calls for the Marine Corps to procure its remaining 410 tanks (66 M1A1s were procured in FY 89) in FY 90 and FY 91. During this period, the M1A1 Common MBT will be produced. The M1A2 configuration in not currently projected to enter production until 1992. The Marine Corps cannot further delay the replacement of its M60A1s, support a mixed fleet of tanks, or wait until 1992 to procure the M1A2. The Marine Corps plans to procure a single configuration fleet of 476 M1A1 (Block I) Common tanks for FY 89 through FY 91 against its Acquisition Objective of 560 tanks. The Marine Corps supports the M1A2 (Block II) effort and will continue to track its progress. The Marine Corps plans to selectively improve its M1A1s in the future with affordable, effective and weight sensitive Block II improvements.

Question: General Gray, the Department of the Defense has recommended closing one of the two M1 tank plants in 1991. Does this decision have any impact in terms of cost or schedule on the Marine M1 buy?

Answer: As confirmed by the Program Executive Office, Heavy Force Modernization, U.S. Army Tank Automotive Command (TACOM), consolidating the production of the Abrams at one tank plant (Lima Army Tank Plant (LATP) will have no impact on the cost or schedule of deliveries of M1A1s to the Marine Corps. In addition, all budget submissions and schedule projections are based on the assumption of one tank plant.

Question: Do you believe the closure of one of the two tank plants is a good decision?

Answer: Yes, the Marine Corps supports OSD's decision to close one tank plant as directed in the Program Decision Memorandum.

Question: General Gray, what is the involvement of the Marines in the Army's efforts toward the development of the next generation tank?

Answer: The Marine Corps policy is to closely monitor development efforts for all future armored vehicles. We provide information and input into the development of requirements to ensure armor vehicle design efforts include our unique amphibious requirements. A recent example is our statement of Deep Water Fording requirements for the next generation tank. We have a Marine Corps Liaison Officer assigned to the Program Executive Office, Heavy Force Modernization, U.S. Army Tank Automotive Command (TACOM), whose duties include close monitoring of all current and future tank modernization efforts. He is also a voting member on the TACOM Senior Configuration Management Review Board. We are currently tracking the Army's Block II product improvements for potential future application to Marine Corps tanks. The Marine Corps also takes part in all Conventional System Committee and Defense Acquisition Board Reviews relating to the current and future Armored Fighting Vehicles. The Marine Corps also participated in the recent Armor/Antiarmor Force Modernization program directed by OSD.

QUESTION: General Gray, the Landing Craft Air Cushioned (LCAC) was designed to carry 65 tons to the shore. The weight of the M1A1 tank is in excess of 65 tons. Are you concerned about the weight of the M1A1 tank and your ability to get it to shore?

ANSWER: The LCAC has a somewhat flexible maximum load capacity. Although the normal payload of the craft is below the weight of a M1A1 MBT, the maximum overload capacity of the LCAC is 75 tons. The ability of the LCAC to carry 75 tons has been repeatedly demonstrated at formal acceptance trials and in service. The M1A1 tank was sucessfully loaded and transported by the LCAC in 1988. The LCAC Safe Engineer and Operations (SEAOPS) Manual allows such operations and the Vehicle Loading

Handbook portion of the manual is being updated to reflect an M1A1 weight of 67.5 tons. The LCAC has shown the ability to get payloads heavier than the M1A1 to the shore.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

PRIORITY OF SEA-BASED FORCES IN DEPARTMENT OF DEFENSE BUDGET

Question: In his outgoing annual posture statement, former Secretary of the Navy William Ball stated that, "Continuing reductions in our access to overseas bases will increase dependence on our seabased forces." He noted that in dealing with regional conflicts, our "military options are likely to be constrained to forces independent of bases ashore." He then concluded, "These developments should cause us to reexamine the priority assigned to forces which can operate independent of base access and overflight rights." The suggestion seemed to be that the Navy and Marine Corps should be given a larger share of the Department of Defense budget, either by having their budgets increased, or by being spared in the budget reduction process. Do you concur with such an interpretation of Mr. Ball's statement? Please comment on the idea that in an era of growing Third World military capabilities and reduced overseas base and overflight rights, the Department of the Navy should receive a larger share of the Department of Defense budget.

Answer: I agree with Mr. Ball's statement but differ with the interpretation. Mr. Ball was not suggesting adjusting Departmental shares of the DOD budget. The Department of the Navy should receive the resources necessary to support the commitments assigned by the national command authority and accomplish peacetime and wartime missions. Mr. Ball's point was that if dependence on Naval forces increases as a result of reduced overseas base rights and overflight rights, then we must ensure that adequate resources are provided to carry out any resulting increase in our commitments and ability to deter war. To arbitrarily assign the Military Departments certain percentages of the DOD budget would be an irresponsible approach to allocating resources; resource requirements should be based on national defense commitments and individual Departmental responsibilities in support of those commitments.

EFFECT OF CARRIER FORCE REDUCTIONS ON COMMITMENTS

Senator Byrd: Instead of attaining a force of fifteen deployable carriers at the end of the year, the Navy will now be restricted to a force of 14 deployable carriers until the turn of the century. In accepting this reduction in the carrier force-level objective, the Navy appears to have won a commitment from the Secretary of Defense that Navy operational and personnel tempos will not be allowed to exceed Navy limits and that some geographic commitments for forward-deployed carrier groups will consequently be relaxed. What will be the nature of this reduction in forward-deployed forces? Please explain which geographic areas will be affected, and to what degree.

Admiral Trost: Forward deployment of naval forces is a fundamental element of our national military strategy. These operations maintain United States influence throughout the globe, deter conflict, allow us to fight our foes far from our shores, and clearly serve our nation's interests.

Modification in forward-deployed forces, as a result of recent fiscal reductions, may entail change of our current Indian Ocean/Persian Gulf posture. Some modification would be acceptable given the current security environment in the region. If we changed our current Indian Ocean posture and subsequently were required to respond to emerging crisis in the region, it would be necessary to respond with our Carrier Battle Group from either the Western Pacific or Mediterranean Sea. This, in turn, would require deployment of additional forces to support the vacated theater.

SSN Attack Submarine Force-Level Objective

Question: Reductions in recent years of projected SSN-688 LOS ANGELES Class submarine procurement raise a question as to how the Navy will achieve and maintain its objective of a force of 100 attack submarines. Does the Navy still support this objective, or has it been reduced to a goal of 90 boats, as it was prior to the Reagan Administration? Please provide a detailed unclassified explanation of how the Navy plans to achieve and maintain a force of 100 attack submarines showing notional or approximate retirements and projected commissionings of these vessels.

Answer: The Navy remains committed to a minimum SSN force level goal of 100 multimission SSNs which is required to execute the U.S. Maritime Strategy against the Soviet threat of 1990's and beyond. The current and projected Soviet numerical advantage and continued evolution of Soviet submarine capabilities necessitate the maintenance of our SSN force level goal of 100 SSNs.

The current production of the Improved SSN-688 Class and the introduction of the SSN-21 SEAWOLF Class will significantly enhance our submarine force's capability. The current SEAWOLF Class rate of production is designed to replace the SSN-637 STURGEON Class as they reach their nominal 30-year life and are decommissioned. With these more capable ships, we will be able to carry out the demands placed on the attack submarine force by the Maritime Strategy within the SSN force level goal of 100 SSNs.

V-22 CANCELLATION AND AMPHIBIOUS STRATEGY

Question: General Gray, the V-22 Osprey tilt-rotor aircraft recently proposed for termination has been a key element in Marine Corps planning for carrying out over-the-horizon amphibious assaults. The CH-53 helicopter, put forward as a substitute for the V-22, does not have the range and speed of the V-22, nor was it designed for participating in an assault. How would the cancellation of the V-22 affect the Marine Corps' ability to carry out over-the horizon assaults and perform other Marine Corps missions?

Answer: We will continue to come from over-the-horizon, as we do today. Clearly we will not be able to do that as well as if we had received the V-22. But, we are stressing the positive aspects of what we must do. We are continuing to improve our command, control, communications; computer intelligence and integrated operability to come from over-the-horizon.

We have already taken major steps to increase that capability. We have four current efforts going on right now to look at the mix not only for the ship-to-shore movement but also subsequent operations ashore as part of that amphibious operation, and then any other sustained land operations as part of a joint and combined campaign.

REDUCED FORCE LEVELS AND THE MARITIME STRATEGY

Senator Byrd: The Navy speaks less often today about the Maritime Strategy. Please discuss the effects of the recent budget-driven Navy force structure reductions on the ability of the Navy to execute the Maritime Strategy in a major war at sea with the Soviets. In particular, will a reduction in the Navy's force structure require a more defensively oriented Maritime Strategy in such a conflict?

Admiral Trost: Our maritime strategy calls for deterrence of conflict through forward operations in coalition with our allies. Fiscal reductions will require that we make difficult trade-offs accepting that some operations must be conducted sequentially, that we will fight on the strategic defensive in some theaters and that, in peacetime, we might not be positioned to respond immediately to tasking from the NCA.

The fiscal reductions of the President's budget can be accommodated within the framework of our maritime strategy with a prudent degree of risk. Verifiable arms control agreements should increase our security. This coupled with ongoing improvements in Indication and Warning (I and W) capabilities should improve reaction time and thus offer the opportunity to reprioritize current defense needs without sacrificing security. However, we must proceed cautiously, closely monitoring changes in the Soviet Union to ensure we continue to field new systems capable of meeting future threats to our national interests.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

U.S. POST-START STRATEGIC FORCE STRUCTURE

Question: Under the START framework that both sides have agreed to in Geneva, the U.S. will be allowed 4900 ballistic missile RVs. The Navy five-year plan shows 21 TRIDENTs authorized by 1994. Twenty-one TRIDENTs would have a total of 4032 RVs. Does this mean the Navy believes the Air Force should be allowed no more than 868 RVs under likely START ceiling?

Answer: The Navy's plan to build a minimum of 21 operational TRIDENTs is based upon appropriate, time-phased replacement of retiring SSBNs. We believe that it would be premature to define a specific force now since this would preempt our START negotiators. Prudence dictates that such a decision process should be evolutionary in nature and based on threat assessment, technological advances and fiscal realities. We believe that survivable SSBNs must continue to provide a significant share of our nation's future deterrent capability. It is to our advantage to carry out the President's Strategic Modernization Program by continuing to build one TRIDENT submarine per year and to resist pressure to decide upon an ultimate TRIDENT force level now.

TRIDENT FORCE SIZE

Question: Does the Navy have any idea how many TRIDENTS it wants as an overall fleet objective? Does the Navy plan to build any more TRIDENTS after 1994?

Answer: The final force level of TRIDENT submarines has not been determined. Several factors, including arms control agreement, the composition of the other legs of our strategic Triad, and changes in the Soviet target base will influence any force size decision. The FY-90 budget submission requests the 17th TRIDENT submarine which would not be delivered until 1996. The Navy intends to maintain an economical production rate of one TRIDENT submarine per year to maintain an adequate force level.

TRIDENT SUBMARINE PRODUCTION

QUESTION: If we were to slow TRIDENT production to one every two years, how much would the unit cost of a TRIDENT sub go up? Both for budgetary reasons and because of likely START ceilings, doesn't it make sense to slow down TRIDENT sub production?

ANSWER: Slowing TRIDENT production to one every two years would force an immediate increase of approximately $105 million in the unit cost of a TRIDENT submarine. This increase is due to a loss of learning at the shipyard caused by a break in production ($60 million) and a loss of GFE-related savings caused by cancellation of quantity buys ($45 million).

In addition, there would be an impact for unabsorbed overhead which would vary depending on the shipbuilder's business base and their ability to absorb the loss of a particular ship. Such a loss would substantially increase the price for other submarines constructed at Electric Boat as well as that for subsequent TRIDENT hulls. For example, loss of the FY 91 ship would cost the government about $100 million in unabsorbed overhead, absorbed by existing contracts on the shareline and by future work on a 100% basis.

Moreover, delay of any ship which has been awarded competitively would eliminate the savings resulting from the competition, since that hull is certain to cost more when procured on a new contract. If, for example, the FY 90 ships were eliminated, the government would lose much of the savings realized by the competition for the FY 88 - FY 90 ships. The savings that resulted from that competition were primarily on the FY 89 and FY 90 ships, with the FY 90 ship the least expensive of the three. Failure to exercise the FY 90 option to the FY 88 contract would result in an additional cost of approximately $70 million for that ship when procured on a new contract.

Slowing down the TRIDENT submarine production rate would be imprudent since this would result in increased costs and would preempt START negotiations.

U.S. POST-START STRATEGIC FOR STRUCTURE

Question: If the Navy were allocated the same percentage of ballistic missile RVs under START that it has today (70%), it would have about 3400 RVs. Rounded off, that would be 18 TRIDENTs. The TRIDENT you ask for in your FY90 budget would be the 17th TRIDENT. In fact, there are long lead funds for the 19th TRIDENT. Do you think it would be wise for the U.S. to put itself in a position where we would be dismantling billion dollar subs that were only 10 years old?

Answer: The force structure flexibility inherent in the U.S. proposed START Treaty provisions will not place us in the position of dismantling newer SSBNs. The continued construction of one TRIDENT per year gives us the flexibility to react positively to any potential arms control agreement, evolving threat, or Congressionally mandated revision to this plan. The production of one TRIDENT submarine per year across the FYDP will result in 21 operational TRIDENTs to replace the aging POSEIDON submarine force by the turn of the century.

POSEIDON SUBMARINE INACTIVATIONS

Question: What is the schedule for future POSEIDON overhauls/deactivations?

Answer: The POSEIDON submarine force will be retired by the end of this century. None of the 26 operational POSEIDON SSBNs is scheduled to commence overhaul during this period. The planned retirement schedule through FY 1991 is shown in the following table:

	FY		
	89	90	91
POSEIDON C-3	1	3	0

The period beyond the budget years of 1990 and 1991 reflect internal DOD planning assumptions which have not undergone the same degree of budget scrutiny and are subsequently not presented.

FAST SEALIFT SHIPS

QUESTION: Has the Navy ever thought about buying Fast Sealift Ships and leasing them back to the private sector with a stipulation that they be available when called to return to military duty when needed?

ANSWER: Navy has recently canvassed the world market and there are literally no FSS like ships available for sale. Navy, in fact, owns the only FSSs. Hence a program of buying FSSs and then leasing them back to the private sector is not possible. The building of new and improved FSS like ships has been addressed in the Fast Sealift Technical Assessment Report recently completed by the Naval Sea Systems Command.

TRIDENT II/D-5 FLIGHT TEST FAILURE

QUESTION: Are the problems associated with the TRIDENT II/D-5 flight test failure (first launch from a sub rather than from a launch pad) understood and corrected?

ANSWER: The investigation of the flight test failure of the first SSBN launch of a TRIDENT II (D-5) missile is continuing. Sufficient understanding and progress has been made to initiate corrective action and the next flight test is currently scheduled for mid-July.

MISSILE DEVELOPMENT

QUESTION: If Soviet ABM defenses were heavily upgraded, might it then be necessary to develop at least a new version of the D-5, if not an entirely new type of missile?

ANSWER: In the event of a massive breakout or substantial upgrade of the Soviet ABM defenses, the precise timing and nature of this upgrade/breakout could dictate any of three possible responses.

a. The present sea-based leg of the TRIAD (POSEIDON, TRIDENT I and TRIDENT II) could be uploaded to its maximum capacity to substantially increase the number of warheads on alert. This approach, in concert with defense suppression targeting techniques, could be executed in relatively short time frames.

b. If required, both the TRIDENT I and TRIDENT II missiles are, by design, capable of employing maneuvering reentry bodies as a one for one replacement for the current ballistic reentry bodies. The development span for such a maneuvering reentry body is typically five years and would build upon the experience of the successfully developed MK500 maneuvering reentry body. Additionally, both the TRIDENT I and TRIDENT II missiles are, by design, compatible with penetration aids should they be required to supplement either the ballistic or maneuvering reentry body payloads.

c. The development of a new version of the TRIDENT II (D-5) missile system or a replacement missile would be required only in the most extreme and technologically advanced form of breakout or upgrade.

QUESTIONS SUBMITTED BY SENATOR TOM HARKIN

NAVY SUPPORT FOR ASAT

QUESTION:

Previous witnesses before this committee have indicated that developing anti-satellite weapons was a very high priority, so that the Navy could shoot down Soviet RORSAT and EORSAT reconnaissance satellites in the event of a conventional war. I notice that your 54-page, single-spaced statement never mentions ASAT weapons.

Does this indicate that the Navy is reconsidering the need for ASAT weapons?

ANSWER:

The omission of ASAT in my statement does not indicate that Navy is reconsidering the need for a national ASAT system. Navy supports the requirement. The ASAT capability is needed to assure our warfighting effectiveness.

QUESTION:

Admiral Hardisty, in response to a written question referring to previous testimony from then Secretary of the Navy John Lehman that the Navy had "some confidence that we know how to cope with those kinds of collectors," stated that:

"We continue to feel that the rate at which we gain fleet experience and capabilities against these Soviet systems, probably exceeds their capability to provide surveillance information against our tactical fleet assets."

Does this mean that the Navy no longer has a requirement to develop and deploy ASAT weapons to counter Soviet reconnaissance satellites?

ANSWER: [Deleted].

QUESTION:

Would you prefer that the United States and the Soviet Union negotiate a verifiable treaty banning the testing and deployment of all dedicated ASAT systems, or a world of unrestrained ASAT weapons systems on both sides that would threaten the survival of our critical space assets?

ANSWER:

The Soviet Union possesses the world's only operational anti-satellite capability. [Deleted].

CH-53E

Question: The Marine Corps requested 23 CH-53E helicopters instead of the 3 originally requested for FY 1990, presumably due to the cancellation of the V-22 Osprey. Assuming that the V-22 is restored by Congress, will your requirements for CH-53E's remain at 23 per year?

Answer: Yes. The Marine Corps' requirement for CH-53E's to support the heavy lift mission is 191 aircraft. Through the end of FY89, the Marine Corps will have procured 102 CH-53E's leaving us 89 aircraft short of our requirement.

Question: Will you continue to have requirements for 89 additional CH-53E's independent of the V-22 decision?

Answer: The Marine Corps' heavy lift requirement is independent of the V-22 decision. The heavy lift requirement of 191 CH-53E's supports 6 operational squadrons and provides for pipeline, attrition, and training assets.

Question: What is the economic production rate for CH-53E's?

Answer: The most economic production rate for the CH-53E is 24 aircraft per year.

QUESTION SUBMITTED BY SENATOR ALFONSE M. D'AMATO

KC-130T

Question: General Gray, for the past few years, the Marine Reserves have been provided funding through the Guard and Reserve equipment account to procure KC-130T tanker aircraft. Could you tell the Committee how this program is doing and where you stand in terms of your procurement objective.

Answer: Congress has appropriated funds for 18 new KC-130T tankers. We require eight additional KC-130T's to fill both squadrons at Glenview and Stewart with new aircraft and provide pipeline assets.

QUESTION SUBMITTED BY SENATOR ARLEN SPECTER

ANCHOR AND MOORING CHAIN

Question: It is my understanding that there is not sufficient volume to sustain more than one source in the anchor and mooring chain industry. As you know, the FY89 DoD Appropriations Bill required the Navy's anchor and mooring chain requirements to be manufactured in the United States. In light of this fact, why then, has the Navy sought to identify a second source for this type of procurement, and what is the Navy's criteria in making a pre-award survey that ensures that this type of chain is manufactured domestically?

Answer: The Competition in Contracting Act (CICA), 10 U.S.C. 2304, requires, with certain limited exceptions, that contracting officers shall promote and provide for full and open competition in soliciting offers and awarding Government Contracts.

The Navy did not "seek to identify" a second source for anchor and mooring chain, but has, in accordance with the requirements of CICA, solicited offers from Lister, a long-time source of chain for the U.S. Navy, as well as soliciting offers from Baldt of Pennsylvania, the other domestic source for anchor and mooring chain. Since the initial restrictions of DoD procurement of welded anchor and mooring chain in 1984, Lister of Canada has always been considered a domestic source. Under the DoD Industrial Preparedness Program, Lister of Canada has been a planned producer of chain for the Navy since 1986.

Lister's plans to establish a plant in Washington state were in process even before the FY-89 Appropriations Act restricted anchor and mooring chain procurements to "U.S." rather than "domestic" sources. Before award to Lister of Washington, the contracting officer verified that Lister was indeed incorporated in the State of Washington and obtained assurances that the chain would be produced in the Washington plant. An on-site survey prior to contract award would have been pre-mature, but DCASMA Seattle has since verified substantial progress towards operational readiness in the Washington plant. In dismissing the protest by Baldt, the GAO stated with regard to determining U.S. origin, that "it appears that the contracting officer did all that was reasonably necessary to ensure Lister would in fact deliver a product that complied with its offer and with the proposed contract."

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee is going to be in recess until June 6, when we will hear the Air Force and Naval Tactical Air Power, with Navy, Marine Corps, and Air Force representatives. Thank you very much.

[Whereupon, at 10:37 a.m., Thursday, June 1, the subcommittee was recessed to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

WEDNESDAY, MAY 17, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 1:30 p.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Johnston, Sasser, DeConcini, Bumpers, Stevens, D'Amato, Rudman, Cochran, and Specter.

DEPARTMENT OF DEFENSE

ARMY BUDGET OVERVIEW

STATEMENT OF HON. JOHN O. MARSH, JR., SECRETARY OF THE ARMY

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. This afternoon, the Subcommittee on Defense appropriations will hear from the Secretary of the Army, Hon, John O. Marsh, Jr., and Gen. Carl E. Vuono, the Army's Chief of Staff, regarding the fiscal year 1990 amended Army budget. Accompanying the Secretary and the Chief of Staff are Lt. Gen. Donald S. Pihl and Maj. Gen. Merle Freitag.

BUDGET REQUEST

The funding request for the Army for fiscal year 1990 is $78.8 billion. That is $1.7 billion below the January Reagan budget, but still almost $1 billion above the level provided in fiscal year 1989. The amended budget proposes several force structure reductions, deactivating a mechanized brigade, downsizing attack helicopter units, and reducing 7,900 military end strength.

Several programs are proposed for cancellation, such as the Army Helicopter Improvement Program, the Apache AH-64 Attack Helicopter Program and the M-88 tank recovery vehicle. While these programs are reduced the budget increases recruiting and advertising, depot maintenance and other support programs.

Today's Army faces many challenges. It is the military service with the highest percentage of personnel stationed overseas at a time when many Americans are questioning our overseas commitments. With one of every three soldiers posted in a foreign nation, the Army has been hit the hardest by the declining value of the dollar against foreign currencies.

As the military service with the highest annual number of accessions the Army has the greatest challenge of attracting qualified recruits while the pool of eligible 17- to 21-year-olds are declining.

Finally, the Army is the service with the lowest percentage of its budget dedicated to equipment modernization, yet land warfare is the area in which Soviet Warsaw Pact weapons systems pose the greatest challenge to U.S. forces.

I must admit that as a former foot soldier myself, I hold a special affection for the Army green, so I am certain the other services are aware of that, and so I look forward to your testimony and I look forward to working with all of you.

May I now call upon my good friend and former colleague of mine, Secretary Marsh?

Secretary **Marsh**. Thank you, Mr. Chairman. I ask the committee's permission to file my statement for the record.

Senator **Inouye**. Mr. Secretary, all of your statements will be made a part of the record in total and you may proceed as you wish, sir.

STATEMENT OF SECRETARY MARSH

Secretary **Marsh**. It is a pleasure to be here, Mr. Chairman. I will tell you quite frankly I did not anticipate that I would be here. In fact, I thought several months ago that I would be gone and I am simply continuing in this post until my successor qualifies, which I think will be very, very shortly.

I would like to thank you and the Committee for the continued help and support that have always been forthcoming to me as the Secretary, and more particularly for your help and support to the U.S. Army.

I would also be remiss if I did not thank the Army General Staff, General Vuono and the other chiefs—General Wickham and General Meyer—for the enormous help and assistance that has been given to me as the Secretary by them personally and that is very, very true in reference to our current Chief of Staff.

ARMY UPDATE

What I would like to do, Mr. Chairman, in order to set the tone and the groundwork, is to give you an update of where your Army is today, as we see it at this particular time. I think this update will address some of the questions that you raise in your opening statement.

If I could have the first chart.

FISCAL YEAR 1990 TOA

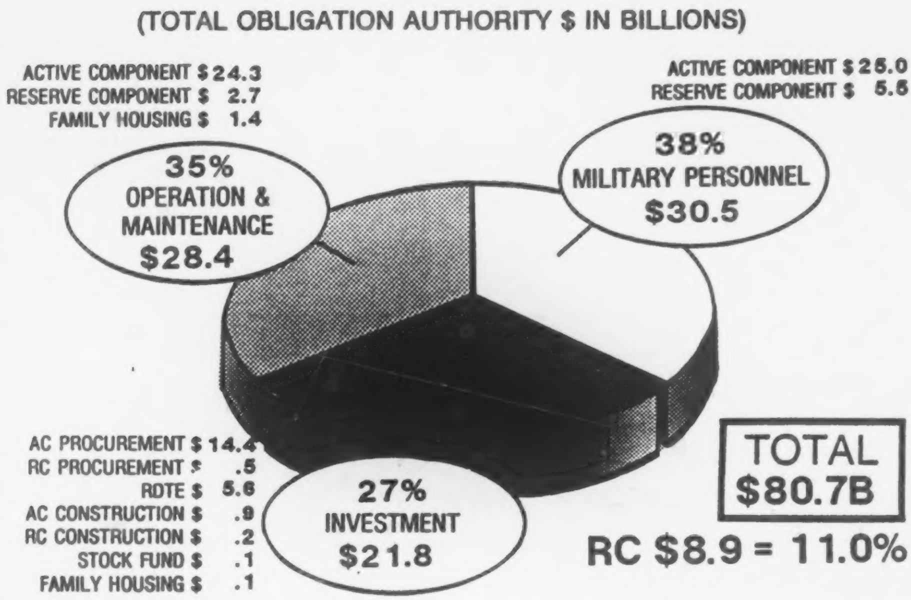


CHART 1

You have already referred to the Army budget at $78.8 billion.

FISCAL YEAR 1991 TOA

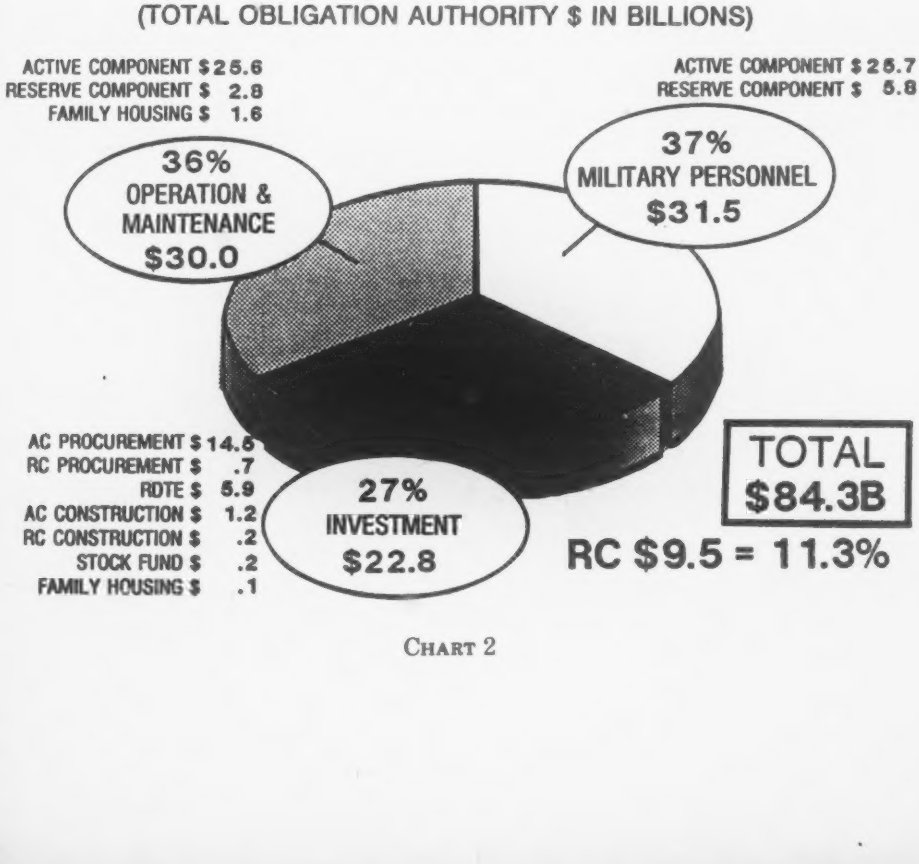


CHART 2

I would point out that about 11 percent of the Army budget does go into the Reserve components. This is for 1991 here, $82 billion again at about 11 to 12 percent will go into Reserve components. You are looking at about $9 to $10 billion a year that is dedicated to the Reserve components—enormous emphasis on that. You see a general breakdown, almost into thirds: military personnel 38 percent, operation and maintenance 36 percent, and investment accounts, which includes modernization, is slightly lower at 26 percent.

The Army April 1980

FORSCOM ZERO STRENGTH UNITS

SQUADS

156 MECH INF
56 SCOUT RECON
121 MORTAR
64 CHAP/VULCAN
37 ENGINEER

CREWS

95 TANK
91 ARTY
124 ANTI-TANK
260 AIRCRAFT

SECTIONS

39 RADAR

TEAMS

49 FIRE SPT
89 REDEYE
49 COMMO

- 7 OF 10 ACTIVE FORSCOM DIVISIONS WERE C4
- ARMY WIDE
  - ACTIVE ARMY SHORT 17,000 PERSONNEL
    - - SHORT 8,000 NCOs
  - NG / USAR 125,000 PERSONNEL SHORT PEACETIME STRENGTH
  - IRR 200,000 TOTAL STRENGTH

Chart 3

In 1980, the question was raised about a hollow Army. I would like to show you some of the shortfalls that we had in the Army and how we have addressed them.

For example, we were short by 8,000 noncommissioned officers. We were 17,000 soldiers understrength in the Army. The Army's Reserve components were 125,000 short—that's the Guard and the Reserve. So we see that we were looking at an IRR of only about 200,000.

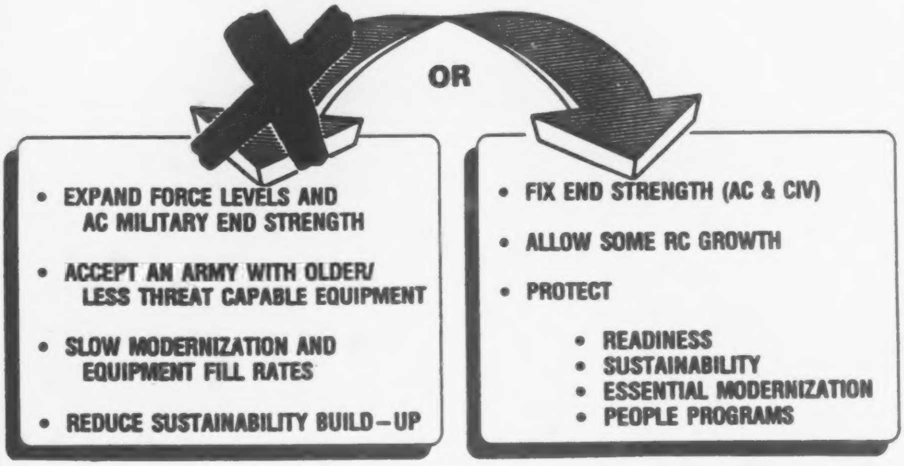
You see an enormous number of shortages here in tank crews and artillery crews, antitank crews, radar section crews, and fire support teams. These are all shortages, Senator, and you also see shortages here of mechanized infantry squads, mortar squads, and engineer squads.

[Chart 4 deleted.]

3D ARMORED DIVISION

Secretary MARSH. Recently I visited the 3d Armored Division which is in Germany as part of our participation in the NATO Alliance. That division is supposed to have 348 M-1 tanks with 348 four-man crews that are all qualified. The 3d Armored Division today has 348 M-1 tanks and it has 348 four-man, well-qualified crews—one of the finest armored divisions in the world.

FUNDAMENTAL CHOICES



- EXPAND FORCE LEVELS AND AC MILITARY END STRENGTH
- ACCEPT AN ARMY WITH OLDER/ LESS THREAT CAPABLE EQUIPMENT
- SLOW MODERNIZATION AND EQUIPMENT FILL RATES
- REDUCE SUSTAINABILITY BUILD-UP

- FIX END STRENGTH (AC & CIV)
- ALLOW SOME RC GROWTH
- PROTECT
  - READINESS
  - SUSTAINABILITY
  - ESSENTIAL MODERNIZATION
  - PEOPLE PROGRAMS

CHART 5

In 1981 and 1982 the Army had to decide whether we should expand our force structure or fix our end strength at 781,000.

The decision was made on the recommendation of the Chief of Staff, endorsed by me and by the Defense Resources Board, to fix our end strength at about 781,000 and concentrate on that number, seeking to fill out that Army and address the shortfalls that I spoke to earlier. Some would argue with that decision to hold our end strength. We think it was a good decision.

RESERVE COMPONENTS

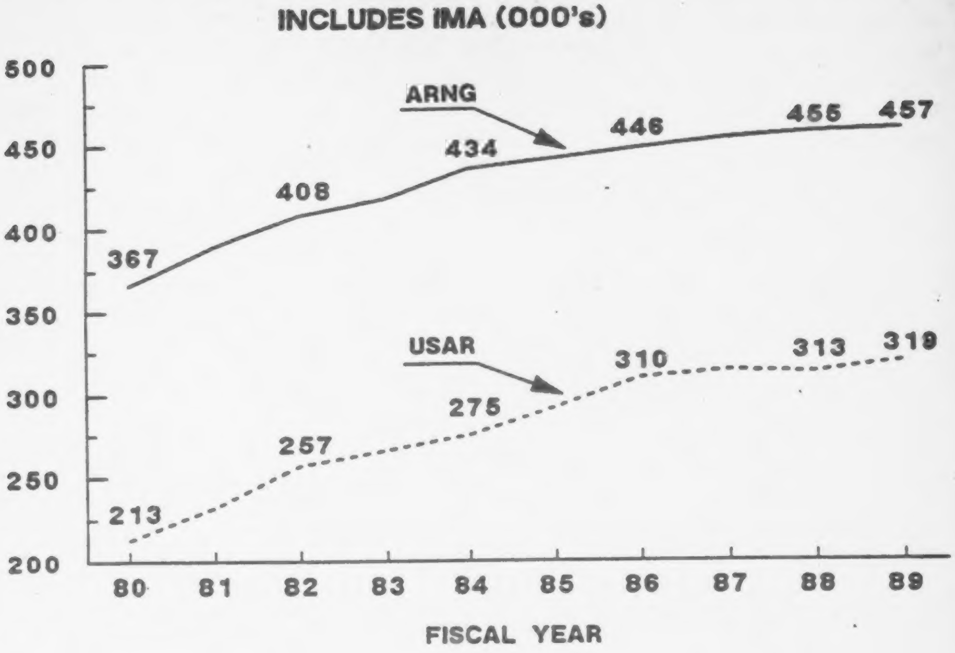
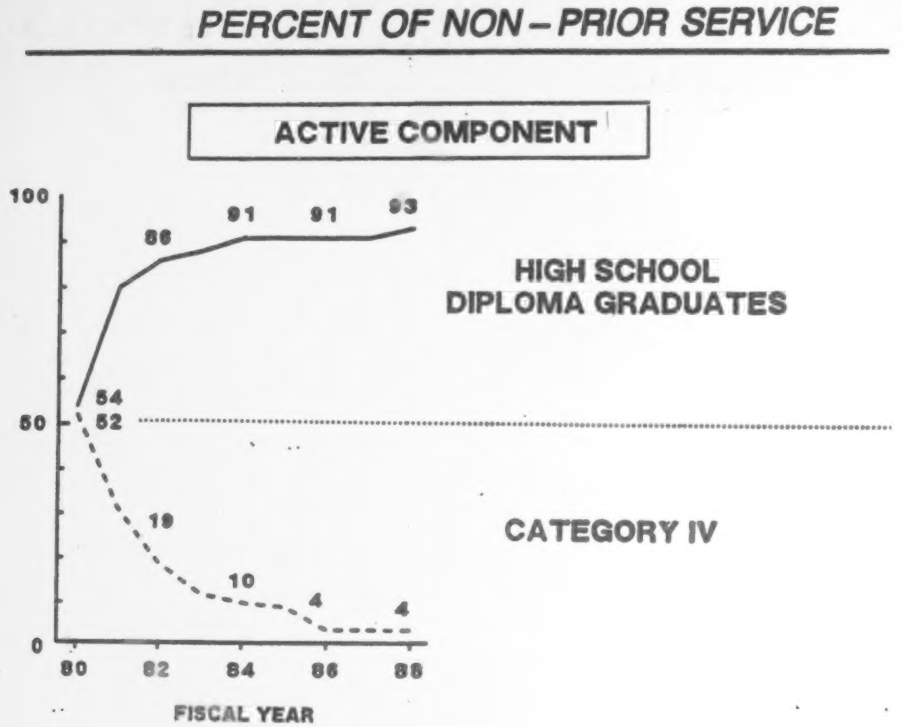


CHART 6

As a part of that decision, you can see that since 1980 we have increased end strength in the National Guard from 367,000 soldiers to 457,000 and the Active Reserve in the Army has increased from 213,000 to 319,000.

We have had an increase in the Guard and the Reserve of nearly 200,000 soldiers. That is a conscious decision that has been made and there you will find much of our combat support and combat service support. Many of these people are veterans of active service, because our indicators show that many soldiers when they separate from the Army join either the Guard or the Reserve.

QUALITY SOLDIERS



PERCENT OF NON-PRIOR SERVICE

ACTIVE COMPONENT

CHART 7

Now, the Congress gave the services a mandate on what we call Cat IV content and high school graduates. In 1980 54 percent were high school graduates and 57 percent of your soldiers in the Army in 1980 were in Cat IV, the lower level of the Armed Forces qualification test.

Today, we recruit 93 percent of high school graduates and the Cat IV content has dropped to about 4 percent. This year it will probably end up slightly higher than that, probably at about 7 percent. The statutory limitation is 20 percent.

In reference to high school graduates, I would point out to you that in age group 17 to 21 in America, about 75 percent of our youth are high school graduates. If you visit the 82d Airborne Division of 14,360 paratroopers, you will find there are only 21 paratroopers that do not have either a high school diploma or the equivalent certificate for high school credits.

If you visit the jail or the stockade—there is no stockade on post, now—for 43,000 soldiers that are stationed at Fort Bragg we have a memorandum of agreement with Fayetteville. Any people that we have to incarcerate we do it in Fayetteville. I inquired how many we had. We had 11 soldiers that were in the Fayetteville jail. Three of those were for very serious offenses.

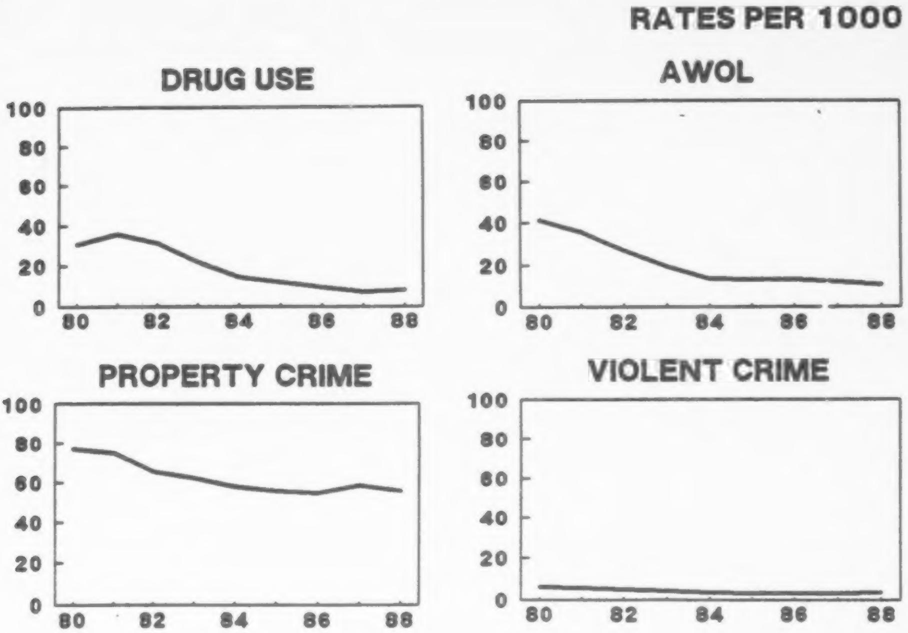


CHART 8

Indeces of discipline are reflected in this chart. We maintain four indicators of how our soldiers perform. One is drug use. You will find that the use of drugs in the Army and in our other services is significantly below their counterparts in civilian life. Property crimes are down.

Drug use is down. AWOL is down. Violent crimes are down. When that happens, this means that people can devote their time to training. Because of these types of soldiers and the Army's people we believe you are going to see a savings of about 12,000 soldiers a year from not having to be processed for attrition and that reduces our recruiting intake that we have to have.

QUALITY SOLDIERS PERFORM BETTER

	AFQT TEST CATEGORY		
ARMOR	**I-IIIA**	**III B**	**IV**
RATE WHICH US CREW DESTROYED OPPOSING TANKS	**7 TO 1**		**1.5 TO 1**

CHART 9

I would say to you, the active Army will recruit this year about 123,000 soldiers. Of this number, 66,000 will be recruited into the Reserve and about 93,000 or 94,000 will be recruited into the National Guard.

These high-quality people bring you other dividends. Our tests show that an M-60 tank manned by Cat I to III soldiers have kill ratios of 7:1 as opposed to a Cat IV soldier who will kill at the rate of about 1.5:1 in the same piece of armor.

[Chart 10 deleted.]

THE GOOD NEWS

Secretary MARSH. Now, these payoffs occur in other ways. There are two great trophies in the field of armor and light armor. The Canadian Cup had never been won by the Army. The Army did win it the last time those competitions occurred.

We won the world's International Helicopter Championship; we won it twice in a row. We had never won the Boeselager or the light armored reconnaissance trophy, but for the last two times that that test has been conducted, the U.S. Army has won it both in 1987 and 1988.

READINESS IMPROVEMENTS

WHAT WE'VE DONE

FY80 TO FY88

	1980	1988
ACTIVE DIV COMBAT READY	10	17
ACTIVE DIV NOT COMBAT READY	6	2*

* 6 LID & 10 LID - STILL BEING FORMED

CHART 11

Now, we believe that these types of improvements have contributed to the international environment that is being reflected in the attitude of people who are seeking to come to the conference table to negotiate. We think there has been an enormous national payoff as far as our policies are concerned.

In 1980, we had only 10 divisions that were combat-ready; 6 were not. Today we have 16 divisions that are combat-ready and 2 in the Active force are building.

Combat Improvements

(ON HAND 88 / PAID FOR 89 / PROCUREMENT OBJECTIVE

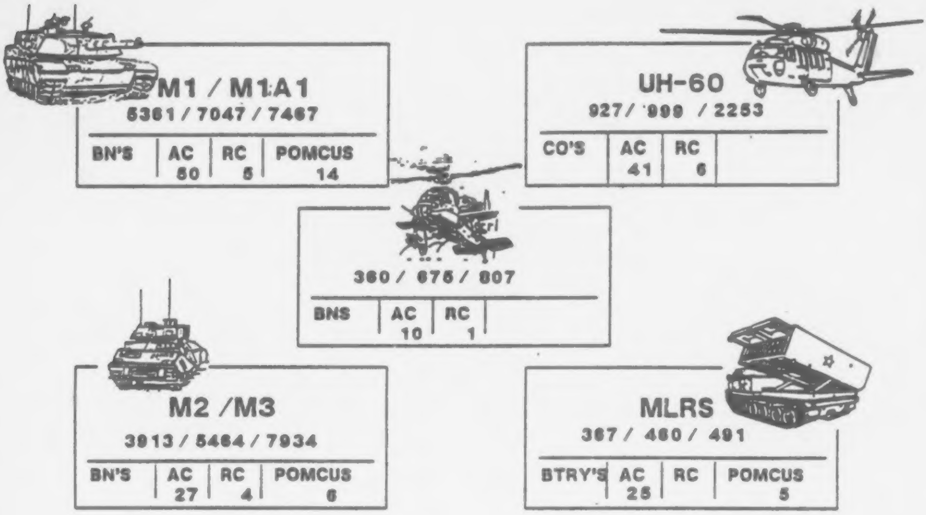

M1 / M1A1
5361 / 7047 / 7467
BN'S
AC 50
RC 5
POMCUS 14
UH-60
927/ 999 / 2253
CO'S
AC 41
RC 6
360 / 675 / 807
BNS
AC 10
RC 1
M2 /M3
3913 / 5464 / 7934
BN'S
AC 27
RC 4
POMCUS 6
MLRS
367 / 460 / 491
BTRY'S
AC 25
RC
POMCUS 5

Chart 12

Now, the question comes up about the hollow Army and whether or not it is being adequately modernized. Let me give you some statistics that reflect directly on what this committee has done to address that need.

Let us take the M-1 tank, for example. Our target goal to build tanks was 7,400 M-1 tanks. We have 7,047 today, either on hand in the inventory or bought and paid for and being produced for delivery to the Army; our goal is 7,400.

We find a similar thing in the Bradley, in the Blackhawk, and the UH-60. We are seeking to build approximately 2,200 UH-60's. We have on hand, or have bought, approximately 1,000. The same with the MLRS, with the Apache helicopter. We are seeking to build 807 Apaches. We have built 675 or they are currently being built for delivery to the Army.

The situation is similar with the Bradley. We are seeking slightly over 7,000; we now have about 5,500 in the inventory.

War Reserve Assets

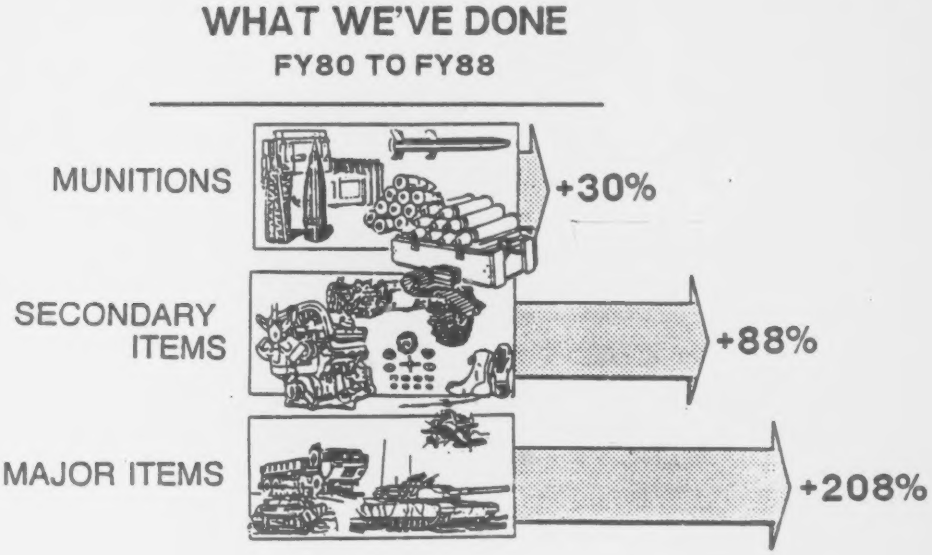


Chart 13

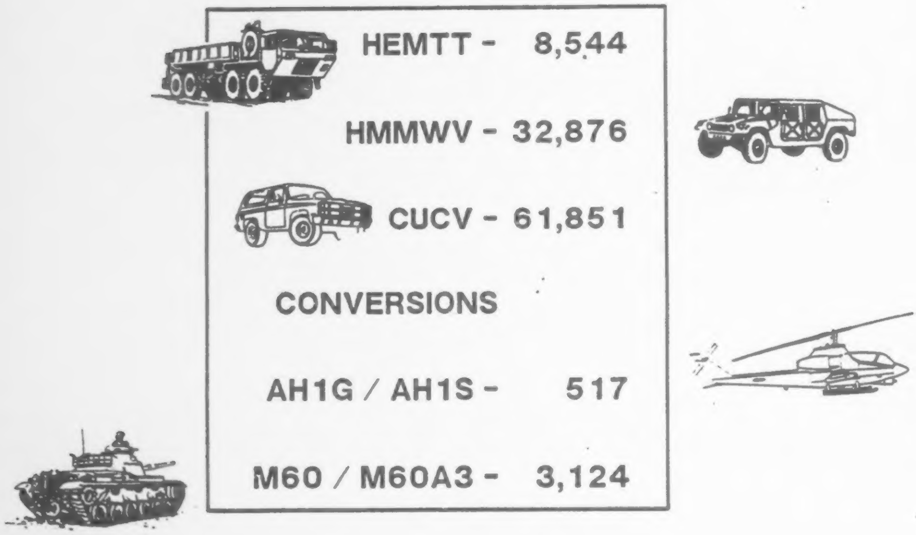
Likewise, in other areas that are not quite as apparent as equipment. In the war reserve assets you will see an increase of 30 percent in munitions, secondary items are up approximately 80 percent, and major items are up 200 percent in our stocks. This is also reflected in our POMCUS. Our POMCUS stocks in Western Europe are being filled. Of the six divisions sets of equipment that we seek to fill, we have made significant progress toward filling most of the combat elements; the support elements still require more work.

EQUIPMENT INVENTORY

WHAT WE'VE DONE

FY80 TO FY88

INCREASES



HEMTT -	8,544
HMMWV -	32,876
CUCV -	61,851
CONVERSIONS	
AH1G / AH1S -	517
M60 / M60A3 -	3,124

CHART 14

Now, in other areas of significant investment, the 10-ton truck—8,500 have been added to the Army; 32,000 HMMWV's are now in the Army; and 61,000 of the lighter CUCV's, utility vehicles.

I would point out to you we have upgraded and modernized in our inventory 500 of the Cobra helicopters, which is a very fine and capable system, and we have also upgraded the M-60 tank to the M-60A3 configuration, which is a very fine piece of armor. We have upgraded over 3,000 pieces of that equipment.

INCREASE IN COMBAT CAPABILITY

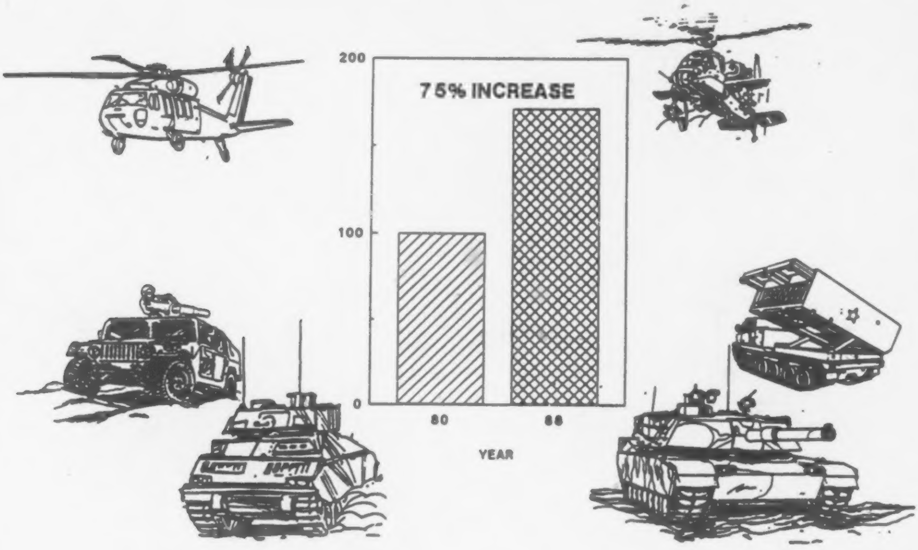


CHART 15

This relates, Mr. Chairman, to what we assess to be about a 75-percent increase in the combat capabilities of the Army, which contributes in a significant way to deterrence.

SPECTRUM OF CONFLICT

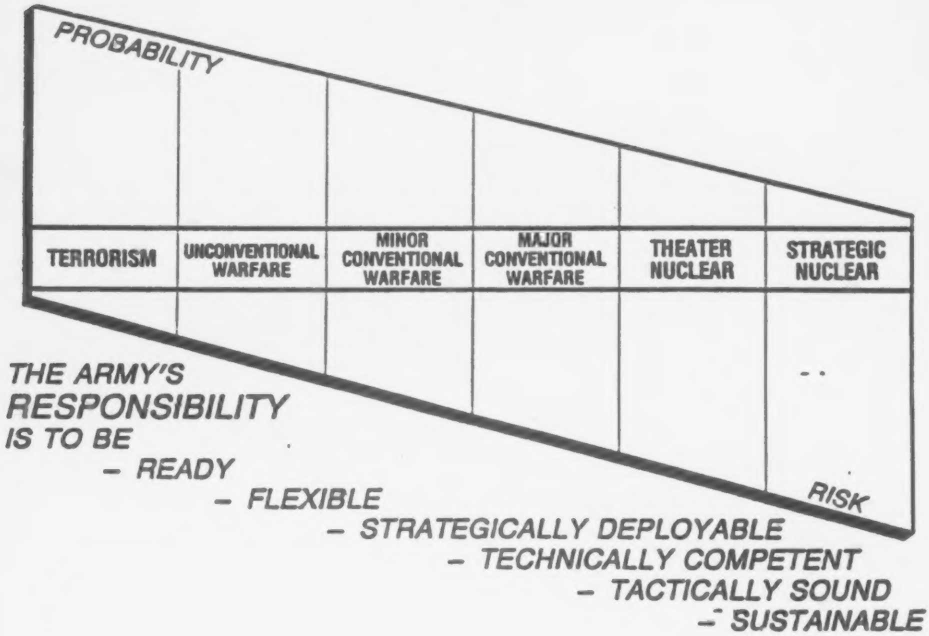

PROBABILITY
TERRORISM
UNCONVENTIONAL WARFARE
MINOR CONVENTIONAL WARFARE
MAJOR CONVENTIONAL WARFARE
THEATER NUCLEAR
STRATEGIC NUCLEAR
RISK
THE ARMY'S RESPONSIBILITY IS TO BE
- READY
- FLEXIBLE
- STRATEGICALLY DEPLOYABLE
- TECHNICALLY COMPETENT
- TACTICALLY SOUND
- SUSTAINABLE

CHART 16

Now, as you know, the scope of conflict today ranges from terrorism in the lower end of the spectrum to strategic nuclear warfare. This lower end of the spectrum has not been neglected by the Army and we see significant gains made in that field with the emphasis on light infantry.

SOF Enhancements

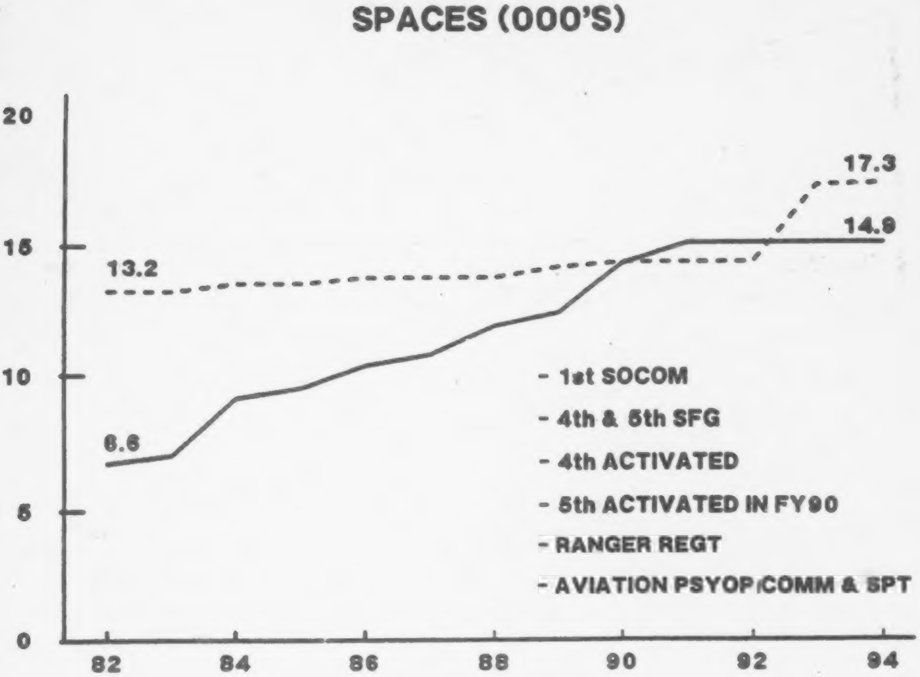


Chart 17

We also see a great emphasis on Special Operations Forces. The Army Special Forces can be reflected in two groups, the Reserve components—the dotted line—and the solid line, the Active force. You will see that the solid line, the Active force, is really being doubled in the program years in the Army. This brings a Ranger regiment into the Army, the activation of additional Special Forces groups, and an emphasis on this very important area of conflict.

Quality of Life

WHAT WE'VE DONE

FY80 TO FY88

76	CHILD DEVELOPMENT CENTERS
10	CHAPELS
65	PHYSICAL FITNESS CENTERS
270	HARDSTANDS & MAINTENANCE FACILITIES
67	DINING FACILITIES
96,000	BARRACKS SPACES
32,000	FAMILY HOUSING UNITS

Chart 18

Now, there are other areas that contribute to readiness and I think here the Congress deserves great credit for the recognition that they have given to the role of the family and the assistance that you have given to the family, where the soldier works, and the quality of the soldier's life.

We see the addition of child care centers, physical fitness centers, and 270 hardstands. There has been a goal to get the Army out of wooden barracks by the year 1990. We will almost make that and we will do it because there have been constructed in the Army in the last decade 96,000 new spaces of barracks and there have been constructed 32,000 family housing units.

MOTOR POOLS UPGRADED

[Chart 19 deleted.]

Secretary Marsh. Now, as an example of hardstands, in 1981 and 1982, there were presentations made to this committee that depicted scenes in West Germany, where armored units had to take care of armor in snow, rain, sleet, and extremely cold weather. These types of hardstands and motor pools now have been upgraded in this period of time, thanks to what you have done.

[Chart 20 deleted.]

Secretary Marsh. Now, there are two areas that I would say to you that need, in my view, to be addressed. One is really not in the purview of this committee, and that is security assistance. I think our security assistance program needs to be reshaped in order to make it more responsive to our national strategy.

AIRLIFT AND SEALIFT

Second, if you were to ask me the one thing that the Army needs that it does not have, I would respond to you it is the one thing that we do not control and that is lift, and by that I mean airlift and sealift.

Lift is the long pole in the tent. It is a serious shortcoming. It is one, in my view, that needs to be addressed. I would tell you that we would have been able to have moved our armored unit in the current crisis in Panama sooner had the RORO ship been stationed in a way that it would have been more available to us.

So I would say to you that these are two areas that have an enormous impact on the deployment of the Army that are areas that we do not control. My parting recommendation would be to ask the committee to give special attention to airlift and sealift.

I believe the Chief would echo this same view and I would now turn to him, sir.

[The statement follows:]

STATEMENT OF MR. JOHN O. MARSH
SECRETARY OF THE ARMY

Mr. Chairman and Members of the Committee:

It is a pleasure for me to appear before the Committee today to report on the condition of the United States Army in 1989.

As we continue the national observance of the Bicentennial of the United States Constitution and of the Republic which that remarkable document established, the Army is proud that every one of its members, across the span of 200 years, has taken an oath to defend the Constitution, as has each of its Commanders-in-Chief, beginning with George Washington, when inaugurated as President of the United States.

The Army also can point with pride to a history antedating the formation of the Union, as it traces its lineage to the troops raised by authority of the Continental Congress.

On March 4th, we marked the 200th anniversary of the effective date of the Constitution and the convening of the 1st Congress -- although the two houses did not achieve quorums until the first week of April.

On April 30th, we observed the Bicentennial of the first Presidential Inauguration. I would also like to point out that of the 40 men who signed the Constitution, 23 had served in the American Revolution, all of them in the Army. They fought the war, helped to draft the Constitution, formed the new government and then served as leaders in the new American government.

I am very proud to inform you that today's Army in the field, formed with the support of the American public, the Congress and particularly this Committee, is trained, and ready for today and tomorrow.

Today's soldiers are the highest quality, by any measure, of any who have ever served. They are highly motivated, well equipped, well led, and well trained. They represent their country well, and through their dedication, determination, and professional competence create the conditions of deterrence which preserve our national security.

Since 1980 we have established a strong, positive momentum in building and maintaining the capabilities of all the Armed Forces. But even as we have moved forward in enhancing our ability to deter war, our potential adversaries have made significant improvements of their own. These advances continue, although their proposed cuts in personnel and equipment are featured in current news.

Our immediate objective is to maintain the momentum established over the past eight years. We continue to focus on four key areas to determine the course of the Army. These areas are:

- Challenges.
- Vision.
- Strategic Role.
- Army Program.

This challenge will be formidable. Security for our freedom and that of our Allies is dependent on our willingness to lead in its defense.

The FY 1989 appropriated budget authority of $78.0 billion was more than $68.5 million below our request. Currently, we are not keeping pace with inflation and we have been forced to defer many programs to later years. Stretching of Army programs will be exacerbated by projected reductions over the next five years.

As new budget submissions are reviewed, I urge you to remember that our budget is a carefully crafted package representative of Army requirements rather than a series of individual programs and lines. The Army program outlined today is designed to counter the threat to the national security of the United States.

We must preserve the positive gains made during the last eight years and expand our sights to counter advances made by our adversaries.

CHALLENGES

The greatest single Challenge to our national security and that of our Allies continues to be the military power of the Soviet Union.

The Soviets have more than 200 ground force divisions with 1,900,000 soldiers; they field over 53,000 tanks, over 60,000 armored personnel carriers and infantry fighting vehicles, 1,600 surface-to-surface missiles -- far more than any other nation on earth; far more than could possibly be needed for defense.

The announced implementation of a 500,000 man reduction in Soviet forces along with cuts in divisions, tanks, and artillery is a welcome step. These announced reductions, coupled with Soviet President Gorbachev's domestic agenda, suggest that there is pressure to reduce the near-term commitment to defense programs that consume 15 to 17 percent of the Soviet gross national product.

Even with these reductions, the Warsaw Pact is still numerically superior in tanks, artillery, armored personnel carriers, aircraft and troop strength. Since the 1960's, the Warsaw Pact has invested in an unprecedented effort to increase in size, far beyond requirements.

This investment has led to significant quantitative advantage over NATO in both conventional and nuclear arms. For years NATO has relied on the quality of its equipment to partially offset the Warsaw Pact's quantitative superiority. Now, however, some Soviet and Warsaw Pact ground force equipment meets or exceeds NATO equipment in sophistication. We need to regain the qualitative advantage. Of interest is the fact that even if the Soviets make their announced force reductions, equipment assembly lines will continue to produce newer equipment at the same rate and modernization will continue.

We salute President Gorbachev's force reduction statements and promise of economic reform. But we must proceed with caution in light of these unprecedented developments. Mr. Gorbachev's economic restructuring could, if successful, provide a more modern industrial base and the capital to continue to strengthen his conventional forces.

The Intermediate Nuclear Forces (INF) Treaty places even more importance on the modernization of conventional forces. The Soviet Union and Warsaw Pact continue to maintain a substantial force advantage in conventional arms even if the recently announced force reductions are carried out.

Soviet fire support modernization furnishes almost 80 percent of the combat power Soviet doctrine says will be needed to achieve a breakthrough attack. Additionally, the Soviets have fielded new fire support systems five times faster than the United States.

With INF, conventional forces carry an increased share of deterrence. For our conventional forces to be effective, we must continue our modernization of short range nuclear forces, follow-on to Lance (FOTL) and the Army Tactical Missile System (ATACMS).

The Soviets have expanded aggressively around the world. Their presence in the Third World permits them to threaten directly the vital interests of the United States.

In many cases, Soviet expansion has been aided by technical assistance and training of military forces in the Third World. Many new emerging nations now possess sizable stockpiles of modern weapons, munitions, vehicles, and communications equipment. These emerging nations do not threaten directly the United States but can influence regional balance.

Today, Libya is one of the most heavily armed nations in the world. Libya may also possess the largest chemical weapons facility in the Third World when the present site under construction is operational. These facts, coupled with Libya's linkage to terrorism, represents a significant threat to Western interests in Africa.

In this hemisphere, the Soviets spent $5.5 billion in economic and military aid in 1988 to maintain the communist government of Cuba. Cuba provides the Soviets a strategic position astride important sea lines of communication through which 45 percent of all United States imports flow during peacetime, and through which 60 percent of supplies and reinforcements for NATO would flow in the event of war in Europe.

Furthermore, Cuba serves as a base through which Soviet supplies destined for the Marxist-controlled government in Nicaragua are funneled. With this assistance, the Sandinistas have built armed forces larger than those of all their neighbors combined. Although their own forces presently exceed that necessary for legitimate self-defense, leaders in Managua plan to continue increasing the size of their forces.

In the Far East, Vietnam now has the world's third largest army, with 1.1 million men in the army and another 1 million in the militia. In contrast, Thailand, Vietnam's nearest noncommunist neighbor is outnumbered approximately 7:1 in men and 4:1 in tanks and armored vehicles.

The threat to United States interests brought about by the Soviet Union and its allies continues to grow. Additionally, socio-economic conditions in the Third World are leading to terrorism, increased violence and instability. The Army must be prepared to meet the challenges posed by a multifaceted threat and must remain flexible to meet a wide range of conflicts anywhere in the world.

The challenges to our Nation's security run the length of the spectrum of conflict. This spectrum ranges from those threats, such as that posed by strategic nuclear war, which are very risky and costly, but fortunately improbable; to those, such as terrorism, which are much less risky, less costly, and therefore, much more likely.

The Army must be prepared to act successfully and appropriately anywhere along this continuum.

VISION

For the last few years the Army Posture Statements have discussed the Army's vision, that is the ability to look into the future. The Army must continually apply lessons of the past to make the Army better in the future.

Let us for the moment, take another look at lessons of the past, on a larger scale, to an event truly American and one that has helped shape the world.

We have previously mentioned the Bicentennial of the Constitution and the 23 soldiers/statesmen who signed this most valuable document. Who could have foreseen the impact on our Nation's history by the adoption of the American Constitution? When George Washington swore to support and defend the Constitution, no one knew that this was the beginning of the oldest democratic republic in the world.

When we focus on this most important document, it becomes increasingly clear that the Constitution is indeed a visionary document. Vision relates to a need. Needs produce vision. There is a direct relationship between vision and planning; planning and execution; and between attempting and achieving. Vision is goal-oriented. It relates to the future. Something we want to be, something we want to achieve, something we want for the Army.

The Constitution is a statement of goals of the American people. It is a goal-oriented document. The oath that Washington took 200 years ago this April, to support and defend the Constitution is the same oath taken by every soldier, sailor, airman, and marine for the last 200 years. Providing for the common defense is a necessity for a more perfect union and it is a necessity if we are going to have a sound general welfare. A strong national defense is vital to our liberties.

As we look ahead, there is no substitute for quality and no alternative to readiness. Guided by doctrine, modernization initiatives, and force structure limitations, the Army will remain flexible to meet evolving United States strategic requirements.

Toward this end, the Army will continue to rely on the Navy and Air Force to transport units anywhere in the world. The Army today and tomorrow, as evidenced by our forefather's vision, will continue to be a symbol of American will.

STRATEGIC ROLE

The Army is a key component in the execution of the United States national strategy. Our objectives are to deter conflict and defeat aggression; to assist our Allies against similar forces, to include terrorism; to ensure our access to critical resources; defend democracy, human rights and freedom throughout the world.

Fundamental to the execution of our national strategy is that the Army remains a flexible nuclear deterrent, supported by the ongoing efforts of the INF and the strategic defense initiative; forward deployed forces; a strong reserve component; and efficient command and control.

The Army is a strategic force. The Army is the only force that can end major conflicts. We must be prepared to respond when and where necessary to decisively engage and defeat the enemy, anywhere and at anytime.

In light of current negotiated arms agreements, which reduces intermediate range tactical nuclear weapons, the focus on strong conventional forces is increasingly more important. Heretofore, tactical nuclear weapons have always been one of our deterrents. Now strong conventional forces are increasingly more important to prevent early nuclear use.

Each Service has only a portion of the ingredients necessary for sound national military strategy. The Army's AirLand Battle doctrine recognizes the need for totally integrated combat power and the Army is prepared to provide our Nation with its special capabilities to deter war, fight and control wars that do start and terminate wars in a manner favorable to our national strategy.

General Vuono, the Army Chief of Staff, will expand our discussion of the Army as a strategic force in his statement.

Based on the threat, our preparedness to counter the threat and the Army's role as a strategic force, let us look at what the Army has done over the past decade to achieve our goals.

ARMY PROGRAM

Although our budget guidance is incomplete to date, nonetheless, we know by the President's recent State of the Union Address that growth in our budget after inflation is nonexistent. Our concern is that revised budget guidance will not even keep pace with inflation and in fact create a negative growth situation.

There are several major areas of the Army Program that I would like to highlight. The successes we have enjoyed in these areas indicate that earlier decisions in charting their course were correct ones. Increasingly, constrained resource allocations will make future successes far less dramatic.

PEOPLE

The Army has strongly supported numerous education assistance programs over the last eight years. Examples include the Montgomery

GI Bill, Army College Fund, and the Veterans Educational Assistance Program. Programs such as these have contributed immeasurably to the quality of the enlisted force.

The number of high school diploma graduates has increased from 54 percent in 1980 to over 90 percent in 1988. Attrition during first-term enlistment has decreased over 10 percent from FY 80 to FY 88. Mental Category I-IIIA soldiers increased from 26.1 percent in FY 80 to 65.7 percent in FY 88. Category IV soldiers, lowest allowable test category of soldiers, decreased from 57 percent to 4 percent during the same time period.

The number of women in the Army has increased over 14,000. Minority officer and warrant officer strength have increased approximately 3 percent.

The quality of life for soldiers and their families has improved dramatically. The number of family quarters, child development centers, chapels and commissaries have increased. Of note are the difficult initiatives taken to provide more quarters for families. Almost 12,000 units have been constructed worldwide. For the first time, the United States constructed family housing in Europe. Approximately 12,500 units have been leased in CONUS and OCONUS.

READINESS

The National Training Center (NTC) at Fort Irwin, California is the premier training center in the world for mechanized forces. The initial capabilities have expanded to include true combined arms training of maneuver with fire and air support. The Opposing Forces at the NTC are aggressive and relentless, further intensifying the training impact.

Establishment of the NTC has been closely followed by development of the Joint Readiness Training Center (JRTC) at Fort Chaffee, Arkansas. JRTC is the first training center in the world for non-mechanized forces.

A series of cost savings measures promise to continue to save the Army millions of dollars per year. The Army has adopted the Air Force military pay system which will save over $200 million over the life of the system. By implementing the cash management initiatives of the President's Reform 88 Program, the Army has saved $66 million. The Army Finance and Accounting Center developed an in-house fund control system that saves the Army $1 million a year. The Army has reduced the number of accounting systems from 54 systems in FY 1983 to 11 in FY 1989.

The Army is supporting the Department of State, Drug Enforcement Administration, U.S. Customs Service, U.S. Border Patrol, local and state law enforcement agencies in the war on drugs. Specifically, our support has included rotary and fixed wing aircraft with night vision equipment, communications support, remote ground surveillance radars, wheeled vehicles and various weapons. Much of this support has been provided by the National Guard.

MODERNIZATION

Our aviation modernization program has become a lead program in the execution of our Air Land Battle Doctrine. We have fielded the world's first day/night all-weather attack helicopter in the Apache. We have fielded 603 aircraft through FY 1988.

We have continued to field a modern utility helicopter in the Black Hawk to replace the aged Huey fleet. The Army has fielded 922 through FY 1988.

Development of the Army's new Light Helicopter, the LHX, is underway which will give us vast improvement in light helicopter performance.

The Army has developed a high proficiency in helicopters. It won the International Helicopter Championship in 1981 and 1986.

Improved night vision devices continue to be fielded to enhance warfighting capabilities for air and ground operations.

We are continuing to field the M-1 Abrams tank, the M-2 Bradley Fighting Vehicle and the Multiple Launch Rocket System (MLRS) as the best equipment of its kind anywhere in the world.

Development of the Army Tactical Missile System (ATACMS) for fielding in the very near future gives the Army's Deep Battle Operations a quantum jump in capability, flexibility, and punch.

In modernizing the tactical communications and command and control arena the Army is beginning to reap the benefit of its efforts. The Mobile Subscriber Equipment (MSE) and the Single Channel Ground and Airborne Radio System (SINCGARS) have been well received by the commanders and soldiers that have tested or used the system. These communication systems will significantly change the way the Army fights by providing increased mobility, a lower probability of detection, more reliable equipment and better communications across the battlefield. In addition to our successes in communications, advances are being made in the five battlefield command and control systems, the Army Tactical Command and Control System (ATCCS). ATCCS will give the battlefield commander the automation support he needs to make sense of the chaos of battle and to better apply combat power where and when its needed.

Perhaps our greatest shortfall is not under our control to fix. The Army is prepared to fight in low-, mid-, and high-intensity conflict environments but we have a tremendous shortfall in being able to get the right units on the ground, in theater, to fight. We lack fast military sealift and both inter-and intra-continental airlift to move men and equipment quickly and efficiently. We must fix these shortfalls with fast military sealift and the C-17 aircraft.

FORCE STRUCTURE

The Army's force structure is the smallest since before the Korean War. In order to meet strategic requirements most efficiently, our Army has been designed with a combination of active and reserve component units. Force structure must be preserved so that we can meet our commitments with flexibility and strength in the face of a dynamic world situation. Our small force is stretched to meet requirements now and we can ill-afford future cuts.

CONCLUSION

I have tried to lay out for you the magnitude of the challenges we face today, the progress we have made over the last eight years, as well as cautions and concerns in several key areas as we move into the future.

We must protect force structure. We must also protect the qualitative gains we have made over the past few years and continue to modernize in the face of ever more constrained resources.

I firmly believe that if we do not learn from the past, we are destined to repeat it. We have learned valuable lessons over the last 200 years. In our continuing Bicentennial celebration of the United States Constitution, we should strengthen our resolve to learn from this document and its authors about America's vision for the future. We must commit ourselves to a strategic vision that focuses our national security goals on the future.

It has been my distinct pleasure to have served as the Secretary of the Army during these most important times and to have been fortunate to work with this Committee. Thank you very much.

STATEMENT OF GEN. CARL E. VUONO, CHIEF OF STAFF, U.S. ARMY

ACCOMPANIED BY:

LT. GEN. DONALD S. PIHL, U.S. ARMY

MAJ. GEN. MERLE FREITAG, U.S. ARMY

General VUONO. Mr. Chairman, it is a pleasure to appear before you this afternoon to report on the state of the Army and explain our priorities for fiscal year 1990 and 1991.

My formal statement for the record and the Army posture statement, which we have submitted earlier, provide much greater detail on the strategic roles of the Army, our posture today, and our azimuth to the future.

My remarks today will concentrate and focus primarily on 1990 and 1991.

PANAMA UPDATE

I thought, before I begin on needs and priorities, that I would give you an Army update on the current situation with regard to our deployment in Panama.

On May 11, we notified elements of the 7th Infantry Division at Fort Ord and the 5th Mech Division at Fort Polk that they would deploy forces to Panama on the operation that we are involved in there.

I think it is especially significant that we moved part of that mechanized element by air, a company of M113 personnel carriers.

The unit was required to be ready to begin movement in 96 hours, yet they were in the air at the 37-hour mark, and had completed their arrival in Panama within 55 hours. That was the air portion.

The seaborne portion is ongoing right now. They will close down there the day after tomorrow.

The latest report I have as of this morning from the area is that the in-place troops and the troops that we deployed from Conus are in an extremely high state of readiness; morale, as you can imagine, is sky high in the personnel down there.

I think, like our deployment last year to Honduras, Operation Golden Pheasant, the movement to Panama, in my view, clearly highlights the value of the Army as a strategic force. Once again, it demonstrates that the clearest symbol of national resolve is a soldier on the ground representing either forward-deployed forces or rapidly arriving reinforcing or contingency forces.

Now there are four thoughts that I would like to leave with you in regard to that movement to Panama.

First of all, as the Secretary said, the importance of a quality army and the reflection of that in today's Army. Deployment of this nature, even of the modest size that we have here, would have been a great challenge to us 10 or 15 years ago.

With the improved quality of today's soldiers and junior leaders, noncommissioned officers and officers, and their senior commanders, we can all, I think, take great pride in how far we have come when we see our young soldiers answer the call of the Commander-in-Chief and do so in stride. I think that is what a quality army does for you.

Second, the readiness we demonstrated. I have maintained that today's Army is trained and ready. I think we can demonstrate that, when we can reach out into the Army and deploy selected units with little or no warning, and I can assure you they had little or no warning, those two elements we deployed, without necessity for a fix-up or a train-up period.

The units we have deployed and are deploying to Panama as part of this operation are representative of the high readiness, created and protected with the great help of this committee, that exists throughout today's Army.

Third, is our ability to tailor forces for contingencies. That mix of forces that the Secretary talked about: heavy forces, light forces, special operations, and support elements, be they forward deployed or based in the United States, I believe must be continuously tailored to evolving U.S. strategic requirements, national commitments, and missions of our theater commanders-in-chief.

In this case, we selected one light battalion and one heavy battalion from our contingency and reinforcing Conus forces to augment the forces already on the ground in Panama.

It is my view that the ability to do this represents one of the strengths provided by the Army today to the Nation in the flexibility it gives the national command authority.

And finally, this operation, again, points out the need for strategic lift. The best army in the world, and I truly believe that your Army today is truly the best army in the world, has limited utility if we cannot put it where it is needed in time to do some good.

We have had superb cooperation and a great effort with transportation commander Gen. Dwayne Cassidy and his troops during this operation. However, our commitments and missions worldwide mean that we depend upon our sister services for sealift and airlift to get out forces where they need to go.

I believe we have got to enhance our national capability in both sealift and airlift. This, of course, is a mission outside of our program areas in the Army, but we are the customer of that sealift and airlift. We need it, not just for the Army, but we need it for this Nation. I ask your support in that effort.

NEEDS AND PRIORITIES

Now, to focus back again on our needs and priorities. Based upon our strategic responsibilities, it does necessitate a mix of readiness, modernization, force structure, and support.

In my view, we can neither focus completely on near-term needs to the exclusion of the future, nor can we focus on the future to the exclusion of being ready and trained today. The Army's budget and 5-year plan is shaped to enable us to remain that strategic force.

We have critical needs in five areas for which we are provided funding, and I want to talk about them.

QUALITY SOLDIERS

First, is quality. I go back to that again. Because it truly is the highest priority we have in the Army: to recruit and retain high-quality soldiers. I believe that quality is truly the bedrock on which the Army has been built. It allows us to include flexibility in our doctrine, it allows us to transition to more complex and sophisticated weapon systems, but most of all, it is a key ingredient in building readiness.

I firmly believe that there is an interrelationship between quality personnel and readiness. High-quality people are a prime contributor to readiness, and high readiness is a critical factor in retaining quality personnel.

People want to be a part of an organization that is on the move and has quality individuals in it. We need your help in this area to ensure that we retain the support for the pay raise and those quality-of-life programs that do not get a lot of visibility, but are extremely important to that young soldier on the ground who is forward deployed or is here on one of our installations within Conus. We need that support for our recruiting programs and we need the Army college fund for all soldiers.

READINESS

Next, readiness. This key factor, in my view, that allows us to both deter and defend, is the high readiness of our forces. Training is the cornerstone of that readiness. This means that to achieve and maintain the requisite readiness, we must allocate adequate funds to support training events and the installation functions that support those training events.

Our training, our OPTEMPO, and our funds for operation and maintenance, have been protected in the process of building the Army budget. I urge your full support for an area that, again, does not get a lot of attention, but it is fundamental to the readiness of our Army, and that is O&M funds and training funds.

FORCE STRUCTURE

Next, force structure. Our strategy and the requirements of our theater commanders demand a force structure of the proper quality, composition, and size. In my view, we can ill afford to cut forces purely for short-term savings when we take our strategic roles, worldwide commitments, and conventional arms control negotiations, into account.

MODERNIZATION

We had to do some of that, sadly, in this budget.

The process of modernization is continuous in the Army, because we modernize to improve our war-fighting capability. We need to modernize to meet the worldwide threat. While the process goes on today, the pace has been slowed dramatically.

We made a conscious decision to scale back our acquisition of current systems to protect both near-term readiness and our ability to achieve overmatch against our threat adversaries in the future.

Our strategy for modernization and the supporting modernization plans that were discussed with you yesterday, provide, in my view, a disciplined process that allows us to adjust to changes in the threat, technological opportunities, and resource levels.

The revised Army budget has caused some changes in our plans, but for the most part, the plans remain on track.

As we look ahead, we must carefully maintain the trained and ready status of the Army upon which our security rests. This will call for the right mix of readiness, modernization, force structure, and sustainability that minimizes the risk to our Nation.

The Army has revised its budget and has made adjustments necessary to produce the optimum mix and balance among those areas with the resources we are provided.

FULFILLING THE STRATEGIC ROLE

For a small army to fulfill its essential strategic roles of supporting U.S. national security interests, there can be no substitute for quality, and no retreat from readiness. I assure you, we will continue to build for the future in those areas, despite our budget constraints.

So, Mr. Chairman, the Army budget that your committee will consider, is one that, to the best of our ability, enables us to fulfill our strategic role. We have kept foremost our national security interests and objectives, the priorities established by the President, and the requirements of our field commanders.

I want to assure you, that with your help, we will continue to provide the United States a trained and ready force, today and tomorrow.

Thank you.

[The statement follows:]

Statement by General Carl E. Vuono
Chief of Staff, United States Army

Mr. Chairman and Members of the Committee:

It is a privilege for me to appear before your Committee to report on the state of the United States Army and to explain our priorities for Fiscal Years 1990 and 1991. As you know, we have revised the budget we submitted in January. We developed this revised budget following consultation within the Commanders-in Chief, the Office of the Secretary of Defense, and our sister services. In my comments today, I will address the most significant changes and their impact, as well as provide you the information you need to understand the current posture of the Army, the importance of the Army's contributions to the common defense, and my assessment of the direction we must take as we enter the final decade of the twentieth century.

STRATEGIC BASIS

The United States is experiencing a period of success in securing its vital interests. Our national security strategy has guided us in assisting our allies and friends, in deterring our potential foes, and has begun to bear fruit at the arms control negotiating table. This success, perhaps unprecedented in United States peacetime history, is due in large measure to sound policy backed by the visible, credible, capabilities and readiness of our armed forces.

The United States Army has contributed to this success. The Army has been deliberately configured to support U.S. national security objectives and meet our commitments worldwide. It is designed to fulfill the strategic roles unique to the Army based on our assessment of the international security environment and the challenges to U.S. vital interests throughout the world. It is focused on providing the trained and ready forces needed by the U.S. commanders-in-chief who are charged with implementing our military strategy. Thus, the composition of the Army -- heavy forces, light forces, and Special Operations Forces; Active and Reserve; forward deployed forces and forces poised in the United States for rapid response to contingencies worldwide or to reinforce forward deployments -- is based on the need of our strategy.

The Army's requirements, therefore, are the requirements of the United States for land forces that can implement our national security strategy around the world.

THE INTERNATIONAL SECURITY ENVIRONMENT

While we know that the challenges to our national security are changing, neither the near-term nor much less the long-term implications of these changes are at all clear. My concerns are threefold.

-- First, I do not doubt that certain fundamental changes are underway in the Soviet Union. Moreover, those changes can be very beneficial to the United States and to the entire community of nations, if they actually result in a less aggressive Soviet Union with fundamentally changed international objectives. However, even if the Soviets follow through with the reduction and changes which they have announced, they will still maintain a very substantial numerical superiority and a threatening presence with their land forces in Europe.

-- Second, while we also applaud the announced reduction in military production by the Soviet Union, we have seen no evidence that the development and deployment of the most modern combat systems have in any way subsided. It is possible that, even after making the announced reductions, the Soviet Union and its Warsaw Pact allies will retain many of the advantages they currently enjoy over NATO forces.

-- Third, and much more complex, is the threat situation developing in the rest of the world. Periods of change present a fertile environment for increased instability and increased danger. In this increasingly multipolar world, we face the potential of multiple threats -- from countries and factions which are becoming more sophisticated militarily and more assertive politically.

All three of these troubling situations point to the need for maintaining a trained, ready, and flexible conventional ground combat capability in the United States Army.

THE ARMY AS A STRATEGIC FORCE

Within this broad national security context, I want to review briefly the key roles that the Army plays, both in peace and war.

We often associate the term "strategic" with long-range nuclear forces. These nuclear forces are, of course, essential to our national security strategy. We must recognize, however, that the U.S. Army is also a strategic force, one which plays unique and irreplaceable roles in securing the common defense. Ground forces are essential to advancing our peacetime security interests and to deterring aggression. Ground forces are the ultimate means to defeat aggression against our citizens, our territory, and our interests.

The four wars that we have fought in this century have reaffirmed that war on any scale centers on the control of land, people, resources, and the adversary's war making capabilities. While the unified action of all services is essential in modern war, only ground forces capable of sustained operations are able to exercise decisive control and terminate the conflict on terms favorable to the United States and its allies.

To meet our national security objectives, the United States and its allies must understand the potential adversaries' intentions and be prepared to contend with the entire range of adversary capabilities. Three elements of the threat are especially important in understanding the strategic context in which the Army and its sister services must operate.

-- First, while our nuclear forces remain the bedrock of deterrence, our conventional forces are increasing important as an alternative to early nuclear use. The INF Treaty reinforces this trend.

-- Second, while the U.S. is certainly challenged by other threats not directly sponsored or controlled by the Soviet Union, the USSR and its allies remain the principal threat to our interests in spite of the significant changes they are experiencing. They will pose the most significant quantitative and qualitative challenge to our security for the foreseeable future.

-- Finally, the set of problems generally associated with the developing world -- insurgency, terrorism, chemical weapon proliferation, and the dramatic growth of conventional military capabilities in many developing countries -- remind us of the need for flexibility, mobility, and a ground force capable of sustained operations across the entire spectrum of conflict.

To protect and advance our security interests in the international environment I have outlined, the Army needs forces that can meet the challenge of a particular conflict, yet are sufficiently flexible to be useful across a variety of types of conflict. With the resources it is provided, the Army must achieve an optimal mix of heavy, light, and special operations forces; of U.S.-based and forward-deployed forces; of combat and support forces; and of Active and Reserve Components.

Army forces, capable of operating in high-, mid-, and low-intensity conflict play unique roles.

-- In areas where the United States has vital interests--such as Europe and Northeast Asia--forward deployed Army forces represent our Nation's most lasting, powerful and, hence, credible commitment. The U.S. soldier on the ground clearly represents the ultimate symbol of national resolve. In undeveloped areas, economy of force areas, or regions where political conditions militate against forward deployment, rapidly deployable Army forces represent a realistic counter to any aggressor's threat.

-- To provide contingency forces adequate to meet challenges anywhere, the Army maintains unmatched forcible entry capabilities. Our 82nd Airborne Division, 75th Rangers and Special Forces units can conduct parachute assaults or clandestine insertions anywhere in conflict of any level. The XVIIIth Airborne Corps Headquarters and its support units, as well as the air assault and heavy follow-on units, give us the ability to project and employ a fully supported corps anywhere, under the most extreme conditions.

-- In combat, robust ground forces capable of sustained operations can dissuade an aggressor from expanding the conflict. Conversely, if required by national and alliance strategy, Army forces provide an excellent instrument to widen a conflict through an intertheater shift of forces, by a major airborne operation, or by means of in-theater deep operations.

-- The Army is ideally organized to assist in or fight low intensity conflicts (LIC). Among the services, the Army alone has the capability to establish the infrastructure for a theater of war. Just as important, many of of the key types of forces needed to engage in or help others to combat low-intensity conflicts exist only in the Army. Among these Army-unique forces are the Special Forces, the Rangers, Psychological Operations units, and Civil Affairs units.

TODAY'S TRAINED AND READY ARMY

I am proud to say that today's Army is trained and ready, reflecting the highest quality in its history. We have made great progress in the past decade, due in no small part to the leadership in the executive branch and in the Congress, including many here today on this Committee.

Over the last ten years, we have markedly improved the quality of the force. This quality has enabled us to accomplish more complex missions, train to higher standards, equip our Army with the most modern equipment, and continue to develop outstanding leaders. In short, quality gives us the flexibility which is so essential for our small Army to meet its worldwide commitments. I want to review the main elements of this success.

-- The past decade has seen a revitalization of Army doctrine. Today's AirLand Battle doctrine is the basis for training our forces for the demands of today's and tomorrow's battlefields, including the essential contributions of our sister services and allies.

-- We have configured our force structure specifically to meet our strategy requirements. However, our structure is perilously small -- the smallest since 1950 -- given worldwide requirements for U.S. land forces. Today we have the right mix of forces -- heavy, light, special operations -- but we have them in inadequate numbers. Moreover, in my judgment we are very close to the limit of reliance that we can safely place on the U.S. Army Reserve and Army National Guard, considering our current national strategy, our day-to-day commitments and the burden of our immediate contingency requirements. The further reduction to Active Army force structure and reductions to Selected Reserve Component units which we have made, added to the reduction of 1989, in order to accommodate the reduced budget, exacerbates the already substantial risk to our national security objectives as a result of the increased gap between worldwide requirements and the forces we can make available. Not only is our overall structure inadequate, but I am convinced that the forces we currently have forward deployed represent the minimum prudent level. Favorable conditions for bringing troops back from overseas simply do not yet exist.

-- Our training has improved significantly. Today we challenge our quality soldiers, leaders, and units with tough, realistic training that produces the readiness upon which deterrence depends. We have been able to do this by increasing the quantity and quality of training opportunities at our Combat Training Centers--National Training Center for heavy forces, Joint Readiness Training Center for light and special operations forces, and Combat Maneuver Training Center for heavy forces in Europe -- and by devoting sufficient resources for training and training support at home station. Further, we have preserved a robust operating tempo, provided increased training for commanders and staffs, and, more importantly, created a doctrine and environment that imbeds training as the centerpiece of readiness. Our emphasis on training also provides the excitement and fulfillment that keeps good soldiers in our ranks.

-- Our modernization programs continue to replace the aging equipment that characterized the Army a decade ago. Our goal is to modernize to improve our warfighting capability against potential threats. Unfortunately, in the last few years we have been unable to maintain the pace of modernization due to resource constraints. The quantity of the modern equipment currently fielded is less than we would like in confronting the size, capabilities, and complexity of the threats we face worldwide. Moreover, increasingly, the most modern Soviet equipment is challenging our technological lead upon which we and our allies have relied so heavily in the past. We are experiencing a quantitative and qualitative disadvantage in ground forces against our primary adversary that is unlikely to disappear even with full implementation of the initiatives General Secretary Gorbachev has publicly announced. The revised budget will still improve our posture in the future, but at a pace that is cause for concern. We cannot indefinitely continue to place at risk the qualitative edge that we must have to offset the quantitative and geographical advantages of our principal adversary.

-- Finally, our leader development programs for officers and noncommissioned officers are one of the most important ways we maintain the quality force and are also our greatest legacy because they provide the leaders that will shape the Army of tomorrow.

In spite of the accomplishments of the past and our current superb quality and readiness, we have a long march ahead. While we are at a peak of quality and warfighting capability, we are on the margin when compared to the requirements of our strategy and the international security environment. We have shortcomings which must be addressed. Additionally, we see our existing quality level as very "perishable." To maintain what we have achieved and to correct our shortcomings, we need careful planning and stable funding for the future.

THE ROAD AHEAD

As we look to the future, we have significant challenges in producing the quality and size land force that our Nation's military strategy and commitments demand.

-- First is the strategy-force challenge. Our strategy demands that we maintain a force structure of the quality, composition, and size adequate to meet the requirements of the combatant commanders and our alliances to deter, fight, and win across the spectrum of conflict. The U.S. cannot afford to cut forces purely for the short-term savings, particularly in light of current worldwide commitments to the common defense, the forthcoming conventional arms control negotiations, and the requirements of alliance security and cohesion.

-- Maintaining the quality of the force is another a major challenge. High quality, retainable soldiers, have to be supported by fair and adequate pay, benefits, and quality of life programs, directed at both married and single soldiers. Our best analysis of the economy and U.S. demographic trends indicate that we can only meet U.S. requirements for quality soldiers with enhanced funding of recruiting programs such as the Army College Fund and increased funding for recruiting advertising, including an appropriate amount of it oriented on the unique needs and characteristics of the Army. As the Secretary of Defense pointed out in his statement before the House Armed Services Committee, there is an interrelation between readiness and quality personnel. We have long felt that quality soldiers and Army readiness are inextricably linked. The quality soldiers we have today are a prime contributor to our high levels of readiness, and the investment we make in training and in modern, combat ready equipment keeps those fine young men and women in the Army.

-- Modernization in the years ahead will challenge our ingenuity and demand adequate and stable resources. We must continue to develop and field high quality, technologically superior systems which support operations across the entire battlefield and can help us pit our enduring strengths against an adversary's vulnerabilities. The Army's current modernization strategy is designed to accomplish that. As you know, last year we refined our Army Aviation Modernization Plan to reflect this strategy. We are doing the same in the other modernization areas including fire support; heavy forces; wheeled vehicles; command and control; air defense; and so forth. Our strategy and the supporting modernization plans enforce a disciplined process that allows us to adjust to changes in the threat, technology, and resources. The revised Army budget keeps all our basic modernization plans on track. However, in aviation we had to reduce the scope of our plan significantly. While we will continue with the LHX as the centerpiece of the capabilities we need for the future, we had to scale back procurement of Apache and Black Hawk helicopters, and to terminate the OH-58D AHIP with this year's acquisition. These aviation reductions have also necessitated a slight reduction and redesign of some of our aviation units. In heavy forces, we maintained economic levels of procurement for the Bradley Fighting Vehicle and the M1A1 Abrams tank. We also continue our evolution to the future as we preserve the R&D investment for the improvements which will lead us to the M1A2 Abrams tank beginning in 1992. In both of these major areas, we have acted in accordance with Army priorities to accept some degree of near-term risk in order to assure future capability to achieve overmatch with respect to the worldwide threat.

-- Finally, arms control is an increasingly important challenge. The United States and its NATO allies are in negotiations with the Soviet Union and its Warsaw Pact allies on conventional armed forces in Europe (the so-called CFE talks). These negotiations have the potential to enhance the security of the United States and its allies. The CFE negotiations promise to be among the most complex and difficult arms control negotiations ever undertaken. The West must approach the conventional negotiations with strength, unity, confidence, and patience, seeking an agreement which significantly improves our present level of security. However, we should not expect arms control initiatives to remove underlying causes of tensions in East-West relations, nor should we let other important but nevertheless ancillary issues--such as expectations that conventional arms control can reduce the cost of security -- cloud our vision.

To sum up, as we look ahead, we must also carefully maintain the trained and ready status of the Army upon which our security rests. This will call for the right mix of readiness, modernization, force structure, and sustainability that minimizes the risks to our Nation. The Army has revised its budget and made the adjustments necessary to produce the optimum mix and balance among these areas with the resources we were provided. For a small Army to fulfill its essential strategic roles supporting U.S. national security interests, there can be no substitute for quality, no retreat from readiness. I assure you we will continue to build for the future in these areas despite budget constraints. Our efforts in this area will be significantly enhanced by your support and commitment to provide stable funding in accordance with the priorities that I have mentioned.

CONCLUDING STATEMENT

Mr. Chairman, the Army budget that this Committee will consider is one that, to the best of the Army's ability, enables us to fulfill its strategic roles. We have kept foremost our national security interests and objectives, the priorities established by President Bush, and the requirements of our field commanders-in-chief. I want to assure you, we will continue to provide the United States a trained and ready Army, today and tomorrow.

Senator INOUYE. General Pihl, are you going to testify?

General PIHL. No, sir.

Senator INOUYE. All right. Thank you very much, General.

Before I proceed, and I just hope I do not embarrass my staff director here, Mr. Collins, but Richard Collins served in the Army from 1963 to 1966. When he signed up, he did not have a high school diploma. Thanks to the U.S. Army, he got his high school equivalency diploma, and thereafter, he received his bachelor's and master's degree from John Hopkins. That somehow suggests that you people do a pretty good job.

FORT HOOD TORNADO DAMAGE

Most of us here have been made aware of the devastation that was brought about by this tornado at Fort Hood. Can you tell us anything about it?

Secretary MARSH. Senator, I am going to defer to General Vuono. He and I both became aware of this over the weekend. But he traveled to Fort Hood on Monday and personally inspected what occurred there. He is in a much better position to respond to that.

General VUONO. Mr. Chairman, on Saturday evening, about 5:30 in the evening, they had a weather warning in the Fort Hood area. They were estimating winds up to about 50 to 55 knots. Now, if you go back in history you find that that is about the highest those winds have ever gotten in that area. So we took the normal precautions that we take. We moved as many of the aircraft as we possibly could into hangars. Normally we hangar about 10 to 15 percent; we moved up to about 50 percent of the birds in the hangars, and then tied down, with our required tie-down equipment, those other birds.

Now at Fort Hood we have a mix of aircraft—Apache, Blackhawk, OH-58's, Hueys, and Cobras. We have a high density of Apaches down there because that is where we run our consolidated training package for all our battalions in the Army, Active and Reserve, that are converting to Apaches.

When the winds hit, they exceeded very, very rapidly, 50 to 55 knots. They were clocked at 88 knots. Of course, there was no pattern to the path. It went over the housing area and destroyed a number of roofs off houses and buildings. It took off a lot of doors and so forth. It knocked down any number of trees in that area. It took out 100 telephone poles. They were without power down there for about 36 hours.

It then went through the airfield. One side of the airfield was not touched at all; the other side, unfortunately, where we had the bulk of our Apaches, took the brunt of the high winds.

I must say that the Fort Hood folks, the military and civilians, did a masterful job of cleaning up. We were very blessed that there were absolutely no serious injuries. It was a Saturday afternoon and the flight lines were clear. We had one young soldier who was banged up in the hand, just minor. I talked to him on Monday. He was thrown 75 yards in the air. I asked him what he was doing out there on the flight line, and he said he was trying to rescue his pilot who had just come in off a mission, and the pilot could not get out of the bird and he was trying to get him out.

But he said that the wind just came up and picked him up. He had no idea that it was going to be that strong.

What we are doing now is estimating the damage. We have technical inspectors on the scene from both the Army and from civilian contractors, because we want absolutely the best we can find to do the various classifications of aircraft so we can determine the extent of damage. There is probably some torqueing that has been done with those aircraft, and we need to know what the structural damages are, what percentage will have to go back to the depot, and what we can fix on the ground.

The major damage was rotor blades. We lost over a couple of hundred blades, which is, as you know, a significant amount.

The information is still coming in from the team on the aircraft.

We have down there 495 aircraft of various types. As I said, we had hangared about 50 percent of those. Right now we are estimating that some damage was inflicted on anywhere between 160 and 180 of those aircraft. Out of that, probably anywhere in the neighborhood of 60 to 75 will have to undergo some kind of depot repair.

Those numbers will change as we check the aircraft out and fly them.

We are moving aircraft that we have elsewhere, float aircraft, into Hood so we can bring the Apache training battalion up to its level and not lose any momentum on the training and deployment of our Apache battalions.

In addition to that, we will bring in other aircraft from float for the OH-58 Fleet and others. In the meantime, the process continues of cleaning up and fixing up the housing. We had to move a number of families out of quarters on Saturday night and put them elsewhere. That all has been done. I think the people down there, the families and the soldiers, have been well taken care of.

Our efforts are concentrated, of course, on that, and then, the assessment and the repair work for the aviation. We are looking, Mr. Chairman, at a sizeable bill to take care of all of that.

Senator **Inouye**. I have been advised the sizeable bill will be in excess of $500 million.

General **Vuono**. I think so, sir. I think it is going to be higher than $500 million; yes, sir.

I do not have an exact figure, and we will get that, but I think at over $500 million is a good figure.

Senator **DeConcini**. Excuse me, Mr. Chairman. Could I just ask a question on that subject matter?

Senator **Inouye**. Please do.

Senator **DeConcini**. Will this analysis of the need to rebuild these damaged helicopters also include whether or not the Army would buy replacements for them?

General **Vuono**. Yes; we will have to look at that and see how many are totally damaged and what can be fixed at depot level.

The indications that I have now, Senator, is that depot repair will be satisfactory and we will not have to go for another buy. But, as I say, that is something that over the next couple of weeks, we will probably really finalize.

Senator **DeConcini**. Will you advise the committee what that determination is?

General **Vuono**. We will.

[The information follows:]

We do not envision any procurement requirement for additional helicopters at this time. However there will be a procurement requirement for components such as main rotor blades and hub assemblies. The damaged AH-64's, UH-60's, CH-47D's appear to be economically repairable. The UH-1's, AH-1's and OH-58's that sustained damage and are not economically repairable will be disposed of and the number of applied against the total directed by OSD to be retired.

QUALITY OF PERSONNEL

Senator **DeConcini**. Thank you.

Thank you, Mr. Chairman.

Senator **Inouye**. The Secretary spent much time on the quality of personnel, and you have indicated that in category IV, at the present time, there are about 6 percent. Is that correct?

Secretary **Marsh**. Seven.

Senator **Inouye**. I bring this up because I have been advised that it is in excess of 10.

Secretary **Marsh**. Senator, I think that those are the statistics that come from the first two quarters of the recruiting year. And I think your recruiters will tell you that those were the walk-in people; it did not include the Delayed Entry Program [DEP], those people who would be coming as part of the DEP program in the latter part of May and June and the early summer.

With the addition of those people, plus some of the benefits that we have asked, from the standpoint of recruiting incentives, we believe that the year will finish out at about 7 percent. But the first two quarters did show an indication of around 10 to 11 percent.

General **Vuono**. Let me just add to that, Mr. Chairman. The DEP is a factor. In addition to that, we have had a very successful retention effort for first-term soldiers underway. Also, as part of our force structure reduction plan, we have reduced the recruiting mission for fiscal year 1989 by 4,000. All of these actions in combination will help us keep down the level of Cat IV's, but this is only a temporary fix if we do not receive additional recruiting resources and incentives. As a result of that, we were able, at about April 15, to tell our recruiting command that they would recruit zero category IV soldiers to access for the remainder of this year.

All of our actions to date, along with the DEP, will allow us to come in at about 7 percent this year. Again, we do need your support for the 2-year Army college fund for all soldiers, combat support, and combat service support, because that is a tremendous incentive for youngsters of the college-bound category that we want to bring in.

I talked to a young recruiter Saturday afternoon and he said, "Chief, I do not have any problem with quantity, but what I need to work on and what I am working hard on is my quality." Those programs are a great assist to get the kind of quality we want.

Senator INOUYE. Speaking of quality, I have been advised that the Army is having great difficulty in recruiting high caliber-type personnel to man the sophisticated and highly technological-type equipment. Is that correct?

ARMY COLLEGE FUND

Secretary MARSH. I think probably that reinforces what the Chief says. We know that is a market in American youth, the college-bound youth, and that the 2-year enlistment is really the only option for enlistment that they will consider.

Currently, the 2-year college fund can be used as an incentive for an individual who enlists in the combat arms. It is not available for those who enlist in combat support and combat service support, where you do have the kind of requirements that you referred to for sophisticated equipment. We would like to have, as the Chief said, the 2-year fund for both combat arms and noncombat arms, in order to reach out to what we know is a college-bound audience.

Senator INOUYE. Can you tell us how this Army college fund will operate and how it will help you in your recruiting?

General VUONO. Mr. Chairman, what it allows us to do is to attract the youngster who may want to go to college, but cannot afford to go on his own. What we simply do is we provide him an amount of money; he provides some, he puts some against it himself. He serves 2 years and then he has an obligation in the Reserve components for 2 years beyond that.

So we not only get a high-caliber youngster in the active, but when he leaves the Active Army, we do not have to train another soldier in a Reserve component.

In addition to that, there is another spinoff on that program, which has really been significant. Up until a few years ago, we did not have many officers coming in through ROTC or West Point, particularly ROTC, who had any prior service. My personnel people told me yesterday that we will commission this summer 1,400 lieutenants who have had prior service. I believe that is a spinoff on that Army College Fund Program.

So we benefit from it in terms of what they produce near term; we benefit long term through the Reserve components; and we certainly benefit when those youngsters go back to college and then enter our ranks as commissioned officers.

Secretary MARSH. The college program, Senator, is a combination of both the Montgomery GI bill and the Army college fund, so you want those two programs together to provide an attractive package, sir.

Senator INOUYE. Senator Stevens?

LIGHT DIVISION—ALASKA

Senator STEVENS. I would like to get a little provincial, first, in these hearings. Last year the budget adjustments delayed the deployment of the last battalion to Fort Wainwright for the light division. Could you tell us what the status of that unit will be under this budget? And are you satisfied with the progress, now, that the Alaska National Guard unit is making, in order to round out the division in Anchorage?

General VUONO. To answer your second question, yes, we are satisfied. We think we have got a good program to bring on the National Guard brigade that will round out the 6th, and we are very pleased with the whole performance of the 6th Division. As a matter of fact, they have done, I think, a remarkable job in a very short period of time in building that division and becoming a trained force.

We are not able in this year's budget to bring on that fifth battalion. We had wanted to do that, but given the cuts that we had to take, we cannot bring that on, as it looks right now in 1990.

COMMAND STRUCTURE IN ALASKA

Senator STEVENS. We have a new command responsibility now for Alaska. Alaska will become, all the military units, a subunified command under the Commander-in-Chief of the Pacific. And I know that that means that the Army's 6th Light Infantry Division will have a different role now. Will it be subject to a different command structure? Can you tell us, have you analyzed what the changes that are potential there, as far as the light division and what this new subunified command will mean to the Army, in participation now, as part of the Pacific Command?

General VUONO. Well, Senator, we are very happy about the rearrangement of the command structure. We believe putting the Army elements under Pacific Command, and specifically under the Army component commander there at WESTCOM, will give us a much broader focus for the 6th Division in that whole theater of operations.

I believe that not only will it enhance our capability in that region, but it also will do a great deal to enhance the presence of Army forces in that area. I would see an expanded role for the 6th in the Pacific theater over a period of time.

JOINT READINESS TRAINING CENTER

Senator STEVENS. You have, I understand it, a potential for some light infantry activity in the Joint Readiness Training Center for light infantry, airborne units and the special forces units. Can you bring us up to date, what is going on with regard to that? There are several locations, I understand, that are being considered. How far along are we on that study, and what is the cost of that proposal?

Secretary MARSH. Senator, I will start, and then General Vuono might wish to amplify on it.

There are currently under consideration four different locations for the Joint Readiness Training Center, one of which is Fort Chaffee, where it is currently located. One of the considerations that is driving the solicitation of places is a facility where there is significant or enough land under Federal control; really, under control of the Army.

A second consideration is the capital improvements. Although the number of buildings that you will need are not large, nevertheless, there is a requirement for certain capital improvements: buildings to house your cadre, briefing halls, some mess facilities.

So I think a combination of control of land, as well as facilities in order to handle the facility and air access are very, very important considerations.

As I said, of the four locations that are being canvassed, Fort Chaffee is one. The decision will be made on that, I would assume, by June 1990, based on the impact statements that are currently being made.

General Vuono might want to add to what I have said.

General VUONO. Only that the Joint Readiness Training Center gives us a great capability to train light forces of all types. We are very interested in determining a final location for that center. I would only say that we have to get those environmental statements completed before we can go forward and decide where we are going to put it.

Senator STEVENS. Well, now, I understood that there were several areas that had been eliminated because of various considerations that do have the facilities and would not cost the money. And that would be necessary for the modifications at Fort Chaffee.

I understand that our site at Fort Wainwright is deemed not eligible. And that is a judgment call that someone has made, but why not use Fort Drum or the other light infantry sites that already exist, rather than spend Milcon money to modify an area that does not have the facilities that either one of those areas have?

The three light infantry areas now have those facilities, I understand, but apparently someone said our site should not be used because it does not have direct rail transport. Well, we do not have any direct rail transport to the south 48, everybody knows that. But we have rail transport to tidewater.

Fort Drum has rail transport. It is not right there to the fort, but it has it to New York. I question the elimination of some of these facilities that we have already spent millions of dollars on and the desire to spend new money in other areas.

General VUONO. Well, sir, we have looked at some 49 sites against a set of criteria that we believe are valid for the final location of that center. I would not preordain which of those four sites that are now under consideration are going to be successful. We are going to balance it against all of those factors.

I am convinced that the sites that we eliminated were eliminated for good reason, be they environmental reasons or whatever it might be. And I think the four sites that we have now that we are looking at would give us a good package. Now, it just depends upon which one of those is most cost-effective and allows us to give our troops the best possible environmental-level training that we are trying to accomplish.

Senator STEVENS. All right. Well, we may look at that later as far as I am concerned, but I think that the most cost-effective is something that does not require us to eliminate something else from the budget when we are operating under a ceiling. That is the problem: this is going to be light infantry money; it is liable to delay further my other battalion.

The way I look at it, in the long run you have a ceiling on the defense budget and if you crank something in that is not necessary, something else has got to come out. In a timeframe consideration, that is difficult for some of us who want to complete the light infantry deployments, per se.

COLD REGION TEST CENTER

My last question, well, I have got two questions. One question is about Fort Greeley. And that is that Cold Region Test Center in Alaska. General, I have been told that there are plans under consideration to try to move a portion of Fort Greeley to another center; to move people back and forth to Greeley each year, is that the plan? They call it the safari plan.

General VUONO. Senator, there are probably always some plans working that I am not familiar with, and this is one of them. I will have to get back to you, because I am not familiar with any plans to move elements out of Greeley. But I will get back to you on that.

Senator STEVENS. Well, I would appreciate that, because the Marine Corps has a joint testing facility with the Army at Fort Greeley. And if that situation is weakened, they could well be forced to find other facilities, too. I would like to see a cost/benefit ratio on that.

General VUONO. I will get back to you on that, sir.

[The information follows:]

Plans for the U.S. Army Cold Regions Test Center [USACRTC] are to draw down military personnel to levels required to comply with FY88 Army Program Budget Decision [PBD] 731. This will be accomplished by attrition.

MILITARY AND CIVILIAN STRENGTH

	Pre-PBD 731	Current strength	PBD 731
CIV	34	31	32
OFF	25	21	23
WO	1	1	1
ENL	227	141	28
Total	287	194	84

PBD 731 totals will be reached by June 1990.

USACRTC will continue to operate as they have in the past. Safari operation from a CONUS test center had been studied but is not being implemented. Troops borrowed from FORSCOM will continue to be utilized to perform a significant portion of the testing.

APACHE DAMAGE AT FORT HOOD

Secretary MARSH. Sir, that may be referring to the Cold Weather Test Range, which is some distance from Greeley. And there was some suggestion on that. But I was of the view that we had decided not to proceed with that. But we will get you further information on that.

Senator **Stevens**. Lastly, I am disturbed about this sad loss in that storm damage that you visited at Fort Hood. But what I have not heard is what you are going to do about replacing the Apaches.

I went down there once and visited those Apaches. And it does not sound like, in the plans that I have heard and from what I have read, that there is going to be a request to replace the Apache training facilities down there. What are you going to do with regard to the Apache portion of the loss down there?

General **Vuono**. We are going to determine how many of the Apaches can be fixed on site and how many of them have to go back to depot for rebuild. We then will cross-level across the Army. We have, as you know, a number of float Apaches for just this reason. We are right now in the process of determining how many of those we have to bring into Hood to continue the Apache training mission.

It looks like we are going to have to bring in probably about 26 Apaches over the next few weeks so that we can pick up the training load from the Apache Training Brigade. And my figure this morning, we had 24 of those 26 earmarked.

Senator **Stevens**. Aren't you closing down that Apache line in 1991?

General **Vuono**. We are closing down the Apache line in 1991 at 807. We are going to buy 807 Apaches and are closing it down in 1991. This should not affect the closedown of that Apache line. But as I said earlier, I will know better in a couple of weeks. I do not think that this event will affect that plan, because I think we can get them through rebuild rather than have to purchase new ones.

Senator **Stevens**. I misunderstood. I thought they were totally destroyed.

General **Vuono**. No, sir; we have, I think the latest figure is somewhere between 25 and 35 Apaches that may have to go back to depot for repair, but they are not totally destroyed—at least right now. As I say, that number is changing.

Senator **Stevens**. Mr. Chairman, I have some other questions, but I would like to submit those for the record.

I appreciate your courtesy.

Senator **Inouye**. Senator Rudman?s

CONGRATULATIONS TO SECRETARY MARSH

Senator **Rudman**. Mr. Chairman, thank you very much. And I think I would be remiss, Mr. Secretary, if I did not tell you how much—I know not just my own view, but of the entire committee, of the job that you have done as Secretary of the Army. I do not know what the record is since DOD came into existence and the whole structure was reorganization, but has anyone held that job longer than Secretary Marsh?

Secretary **Marsh**. No; not either Secretary of the Army or Secretary of War. I have been there longer now than either.

Senator **Rudman**. Well, I thought that it was probably. I thought maybe going way, way back there was a secretary of war who might have been there longer, but I guess Secretary Stimson was not, so you would have been there the longest time, and you have done a first-rate job. You have been a pleasure to deal with.

And I know I speak for Senator Inouye and myself for a particular matter which arose during the Iran-Contra hearings, which we required the greatest devotion to public integrity and public service and candor. And that is a matter which is highly classified, but the Secretary of the Army voluntarily came to see the chairman and the vice chairman to bring something to our attention he thought that we should know about.

And I was enormously impressed by that. And we owe you a debt of gratitude, not for that, but for you leadership. And I wanted to say that, since this is probably your last hearing before the committee.

Secretary MARSH. Thank you, Senator Rudman, I appreciate it.

HEAVY FORCES MODERNIZATION PLAN

Senator RUDMAN. General Vuono, I really only have a couple of questions for you. You still have a good deal of time left in your term. And it seems, at least to me, that one of the things that ought to be of great concern to you and your planners is what you are going to do with the Army heavy forces modernization plan, which, of course, is really a compendium, an integration of all the master plans for air defense antiarmor and so forth.

And in light of, one, budgetary restraints, the enormous cost of new technology, and third, and not the least of which, what could happen in the area of NATO and Europe. Has the Army got contingency plans in the event that for one of those reasons, the heavy force modernization plan, let us say in 1992 or 1991, might not be the way to go in the judgment of the civilian leadership of the Defense Department?

General VUONO. Senator, it is just for all those reasons that we have a plan. I think the heavy force modernization plan is a sound plan to ensure that we have near-term capability and that we are planning for the future. Because the future can be very murky, as you very well know.

And that heavy force mod plan was built on the work that started several years ago called the armored family of vehicles. We tried to determine what we were going to need on the battlefield in the next century, and how we could ensure that we would continue near-term readiness to meet the battlefield requirement and also meet the battlefield requirements in the next century.

We said we want to get as much commonality out of our systems as we possibly can. That makes good sense for all kinds of reasons, which I think we both know. We went to work on that plan and we have gotten some good insights out of it.

We could not, in our judgment, afford all that came out of the armored family of vehicles plan. What we had to do was prioritize. We prioritized under the heavy force mod plan that said, how far can you push technology and where is it that you have your greatest need in the mid to long term? Then we packaged the heavy force mod plan that way.

Now, we have a funding level that will allow us to continue with the heavy force mod plan as we have it today and out through the FYDP. We also are prepared to adjust that plan should the need arise. Should we have to make the tough decisions to adjust that plan, I think we have the capability to that, whether we adjust based on resources or adjust based on technological opportunities, or adjust based on changing threat.

Senator **Rudman**. Well, that is a good answer, because that is precisely the answer I hoped you would give.

Because it seems to me that as this committee looks into the outyears, and if you want to just go on an assumption, which I think is not an unreasonable assumption, that the defense budget will remain relatively static over the next 2 to 3 years, you get into that situation, you look at the heavy force modernization plan; if you build into it some cost expansion, even modest, which is inevitable with the kind of technology you are dealing with, and if you add on top of that a change in the threat, then the Army has to be, probably more than in any other service of the three services, ready to really make a very quick shift in how it proposes its budgets to the Congress in those years.

And I guess what I am saying is, and I guess what you have answered is, that you are not locked in, in such a way, this early, that you cannot make those adjustments based on threat, based on budget or based on a variety of other factors.

General **Vuono**. I would make two points if I could, sir. One, any help you can give us on a stable budget would be a great assist in that plan. No. 2, I think we have to be very careful on the threat because we could be in a situation where our potential adversary is even more of a threat with equal capability. I believe we must ensure that we have and maintain overmatch against him in a variety of the heavy force systems.

MIX OF HEAVY AND LIGHT FORCES

Senator **Rudman**. In light of the present threat that we are all aware of, are you satisfied that the mix between heavy forces and light forces is about where it ought to be, or do you agree with some that maybe we ought to be devoting a bit more to light forces?

General **Vuono**. I would answer that by saying that we have devoted a tremendous amount of resources over the past 4 or 5 years in the Army to our light forces.

I think you always would like to have more for both the heavy force and the light force, but I think what is important is that we have a mix of heavy/light and special operations forces that we can use in a contingency environment or to reinforce forward-deployed forces. So, I believe that the package we have is very sound in terms of that mix of forces, and I think that we have done a great deal to improve our light force capability in terms of doctrine, in terms of the structure of those forces, in terms of the training, and in terms of the equipping of the light forces.

Senator **Rudman**. I recall when General Wickham and Secretary Marsh briefed us about the light forces some years ago, and I guess my only thought, General Vuono, is if the threat changes at all, as you look at some of the places in the world—well, such as where you have just sent troops, into that area of the world, I guess you can fairly state that highly mobile air supported light forces and in those kinds of scenarios tend to be far more effective, both cost-effective and tactically effective, than heavy forces. I think that is an accurate statement, is it not?

General VUONO. That is one of the reasons we built the light force capability that we have over the past 5 years. Of course, in our position with our global responsibilities, it is important that we have that mix of heavy and light forces, but I think we have demonstrated in Honduras a year ago on that training exercise and again on Nimrod Dancer here in the last few days that we have that capability of forces that we can move very rapidly.

Senator RUDMAN. Well, General Vuono, Secretary Marsh, no hearing that this committee has had with the Army would be complete if I did not ask my favorite question, and so I will ask. And if you are unaware of this one, you have been poorly briefed.

MANPORTABLE ANTITANK WEAPON

I would just like to know, has the Army made a conscious decision—and it might be the right one at this point—with the evolving threat of Soviet armor that the lethality-to-weight argument just does not work anymore and that you just are not going to have a manned, portable, effective light antitank weapon or are you going to figure the soldiers are going to get brawnier and heavier and you are going to get a bigger weapon and you are still going to make it man-portable?

General VUONO. No, sir; we are convinced that we have a man-portable weapon that the young soldier can carry, 45 pounds. It has the necessary lethality and it is called AAWS-M, which is no surprise to you.

We have had the principal testing done recently, and I am very confident after a long, tough fight that we have a system that we can provide the soldier in both our light forces and our dismounted infantry and our heavy forces.

Senator RUDMAN. Then you have obviously adopted the view that although that weighs 9 pounds would be very attractive, most soldiers would rather carry 45 pounds up to the front knowing that something that weighs 9 pounds would be very attractive, most soldiers would rather carry 45 pounds up to the front knowing it would work. You have adopted that point of view?

General VUONO. When he gets there, he wants it to work, yes, sir.

Senator RUDMAN. Are you going to ask for procurement money for that in next year's budget?

General VUONO. Yes, sir.

Senator RUDMAN. Is it in this year's budget?

General VUONO. No; it starts in 1991.

Senator RUDMAN. And how many of those will be procured to equip the force for proper war reserves? What is the current approximate number?

Secretary **Marsh**. Senator, General Pihl can probably describe what the system will do and when we are going to procure it and in what numbers.

Go ahead, Don. Describe the system to him and what it is going to do.

General **Pihl**. Sir, our budget request for the amended 1990 and 1991 is for $158 million in RDT&E. We will buy a quantity of 58,000 missiles in our initial buy, and we start picking up advance procurement $15 million in 1991. We are entering full-scale engineering development this year.

Senator **Rudman**. What is the total cost of that program going to be per weapon, approximately at this time in this year's dollars?

General **Pihl**. Sir, it will average out at a flyaway cost of about $35,000 per missile.

Senator **Rudman**. I would just say, Mr. Chairman, that I think that is a very wise investment. We were going to buy 1,000,250,000 dollars' worth of Vipers which this committee with the cooperation of the Army and others took a little time and decided that really was not a very good investment, but I think this is a very good investment. It sounds like a lot of money, but with the capability of that weapon, I would commend that other members of the committee look at that weapon.

The Army must have a weapon of last resort for the soldier against armor facing the threat that it faces, and I believe from what I know of this weapon that this will, in fact, do that.

General **Pihl**. Sir, the total investment is $4.4 billion, and the procurement unit cost is $42,000.

Senator **Rudman**. Thank you.

Senator **Inouye**. Senator Bumpers.

Senator **Bumpers**. Mr. Chairman, thank you.

Secretary Marsh, our relationship has not been that close. This is my first year on this committee, but I think your record is an outstanding one. I am personally sorry to see you will be leaving. When will you be leaving, incidentally?

Secretary **Marsh**. I had thought I would be leaving several months ago. I would anticipate I will be leaving sometime early in June. I certainly hope that is the case. That is my plan.

Senator **Bumpers**. Well, I think you have done an outstanding job, and continuity I think is so important and so often missing in these jobs, and I think it has paid off handsomely by having you around. I will expect you to reciprocate before I finish my questioning. [Laughter.]

JOINT READINESS TRAINING CENTER LOCATION

Let me start off by saying I come from another school of thought from Senator Stevens on JRTC. That is located 2 miles from my home, and, General Vuono, let me ask you this, have you been satisfied with the training at Fort Chaffee?

General **Vuono**. Yes, sir; it has been good training. The soldiers and units and leaders have gotten good training down there.

Senator **Bumpers**. Well, in addition to that, I think all of you would agree that the JRTC is a great concept and a howling success or we would not be looking at these sites for a permanent installation.

General **Vuono**. It is a great concept and above all, in my view, regardless of where the final JRTC home is, we can ill afford not to have that concept because that truly wraps up the full training of the light forces.

Senator **Bumpers**. Among other things that you will be looking for, let me ask you this question. If you had a choice between putting JRTC at an existing facility where there was another division with some other mission and you were going to have to share 75,000 acres of land with somebody else as opposed to having it all to yourself and not having any conflicts in training and the use of the space, which would you prefer?

General **Vuono**. Well, Senator, that is one of the things we are looking at against the criteria of those sites. I will just have to wait and see how that all sorts out because in anything like this, there are advantages and disadvantages to a single installation, a single mission installation and an installation where you have other troops.

I need to see all of that data before I am able to decide.

Senator **Bumpers**. Well, I appreciate that, but I want you to also remember that Fort Smith, AR, is a city of about 100,000, can probably house the people there a lot cheaper on off-base housing than you can build housing. I know that you are going to have to build some facilities.

Deputy Assistant Secretary of the Army Johnson was in my office this past week and used the figure of $250 million which I must say was rather staggering. I mean, I had no idea we were talking about that kind of money. But, be that as it may, that would give you the liberty of doing this sort of at your leisure and not having to come up and ask for a big chunk of money at one whack and you could do this over a period of time.

And one other thing; I got the impression from Secretary Johnson that a decision will not be made until September 1990 that the environmental impact statement would probably take 15 to 18 months.

General **Vuono**. I think that date is realistic and the environmental impact statement is taking some time to do. Of course, we have to have that done before we can make the final decision.

TROOPS IN KOREA

Senator **Bumpers**. Secretary Marsh and General Vuono, either one, when General Menetry was here and Admiral Hardisty and we were talking about our troops in Korea, I guess my colleague, Senator Johnston, asked, "What are we doing there? What is our mission?"

And I must say the answer never did really come through clearly to me, and I am greatly concerned about that. That is $2 billion a year for a nation that has seven times higher GNP rate than North Korea which ought to be able to handle North Korea with one hand behind their back, who has the third biggest trade deficit against the United States of any nation. And it seems to me that our presence there is a constant political irritant to whoever the dissidents are, whoever is in power, the out power always wants to use the United States as a scapegoat.

So, I am really seriously concerned about why we need to stay there.

Secretary Marsh.

Secretary MARSH. Well, Senator, our presence in Korea is vital from the standpoint of the security of the Pacific. It reflects directly on the security of Japan which is very much a partner in our Pacific alliance.

I would say to you that in briefings, the one area that is likely to become destabilized very quickly is the situation in North Korea. It is a very aggressive military-oriented state. It is very difficult.

Senator BUMPERS. What are the relative strengths of those two nations, Mr. Secretary?

Secretary MARSH. In military strength the North significantly outnumbers South Korea. There has been, over a period of years, movement of North Korean offensive units closer and closer to the DMZ to reduce their jump-off time and warning time in order to launch an assault.

It is clear that there have been several tunnels dug underneath the DMZ to assist the infiltration of forces into South Korea.

Senator BUMPERS. What difference does our 40,000 make in that equation?

Secretary MARSH. In the same manner that the Berlin brigade has made a difference in Berlin, where one brigade of American forces there has become a trip wire that puts the Soviet Union on notice that if you come into Berlin, you are going to engage the American forces.

Senator BUMPERS. And I am sorry to interrupt you, Mr. Secretary, but why should we prop up—and this is not Korea bashing—I am just thinking about our own budget constraints and the cost of our presence there. Why should we prop up a nation that has a seven times higher GNP than its adversary and three times as big a population? Why is it not up to them, at least at this stage of the game, to build their forces to a parity or even superior to North Korea?

Secretary MARSH. If you look at the South Korean armed forces, I think you would have to say that probably no nation certainly in the free world, dedicates more of their resources or assets to building their armed forces.

I would point out to you, Senator, that they put some 66,000 troops into South Vietnam and fought there with us, and there were very few other countries that did that. If you look at the South Korean forces and what they have dedicated to their own defense, it is very, very impressive.

I am convinced that if there is an unraveling on the Korean Peninsula the ramifications of that are going to be enormous for this country as we saw was the case in the 1950's, and I do not want to repeat that. The amount of investment that we make into South Korea is an investment in the defense of the entire Pacific area and that has enormous dividends to us.

Senator BUMPERS. Why should we not ask Japan to pick up the $2 billion price tag, then?

Secretary **Marsh**. Japan does contribute more significantly, I believe, than people realize, and I would have to point out, Senator, that the constitution of Japan which we assisted in promulgating has a very severe limitation on what they can do in the military arena and in building defense forces.

They do contribute and they are taking on certain defensive commitments now, but I am convinced that the Korean Peninsula is potentially a very difficult trouble spot for us. I think you have an uncontrollable type of personality or regime there, not unlike the Albanian type of Communist regime. I think it is very dangerous and very dangerous to us.

Senator **Bumpers**. Do the South Koreans not enjoy a considerable air advantage over North Korea?

Secretary **Marsh**. Air? I would think they do when you count in our tactical air. I think that you generally would say that they probably enjoy an air advantage, but they do not enjoy a ground advantage.

SOVIET REFORMS

Senator **Bumpers**. Well, let us shift gears, Mr. Secretary, and let me ask you, in your statement on page 8 you say Mr. Gorbachev's economic restructuring could, if successful, provide a more modern industrial base and the capital to continue to strengthen his conventional forces.

It seems from that—I would conclude from that that we do not want him to succeed in his reforms in converting to a civilian industrial base because that would make him stronger to build their conventional forces.

Secretary **Marsh**. Senator, I think we cannot discount the possibility that as you improve the capabilities and make more efficient the Soviet industrial base, that they will direct some of those improvements into the military. I would hope they do not. I would hope that the course that Mr. Gorbachev indicates he wants to take with the Soviet Union is one that moves them away from that.

But for those who are engaged in military planning and defensive planning, I do not think you can avoid that possibility that it may not go that way even though we want it to go the other way.

Senator **Bumpers**. Well, in the negotiations, Mr. Secretary, here is the proposal the Soviets have put forward. For example, they say they would like for us to have 20,000 tanks and them have 20,000 tanks. They would like for us to have 16,500 pieces of artillery and them 14,500, 2,000 fewer than NATO would have.

Now, in armored personnel carriers, they say they would like for us to have 28,000 and them 27,000. Now, the ground attack aircraft is the sticking point in the CFE negotiations but I must say that those proposals that they are making which is not just parity but actually gives us a slight superiority in almost every one of those categories would certainly indicate that they are dead serious.

Secretary **Marsh**. I would hope that they are dead serious. As you realize, Senator, the negotiations in that area under the Vienna talks are matters within the purview of people other than myself. Certainly the signs that you talk about are indicators that I think need to be encouraged, but I think also that they need to be observed with some degree of caution from the standpoint of defensive planning.

Could I make a suggestion to you in reference to the Fort Chaffee matter that you raised?

Senator **Bumpers**. Yes.

ACCESS TO LAND FOR TRAINING

Secretary **Marsh**. One of the things that we have observed, Senator, and not just at Fort Chaffee but at other places, is increasing limitations of access to and use of adjoining national forest lands. This situation prevails at Fort Chaffee.

One portion of that training we do is actual firing and digging. We can conduct this type of training on Federal lands at Fort Chaffee. However, as a part of those exercises, it is very helpful to the Army, particularly for the light infantry forces, to have access for reconnaissance and movement, not firing and not digging, across adjacent national forest lands.

This is an area that I would hope would be addressed when we consider, not just Fort Chaffee, but others. We have similar limitations at other places where we are located. But, I would like to point out to you that whatever you might do to encourage access to use of those lands, not for firing and not for digging, would be something that would be quite helpful to us.

Senator **Bumpers**. Well, I appreciate your mentioning that, Mr. Secretary, because that may be a small sticking point, but I do not think it is an insurmountable one. Will the environmental impact statement cover the forest, and you can give me an answer in writing if you would like to.

Secretary **Marsh**. I am simply asking for your good offices in reference to that because I believe it would help.

Senator **Bumpers**. There was some controversy about that, as you know, Mr. Secretary. I got a letter from the Army saying that they did not need the forest and would not use the forest, and I did not know whether that had been put to bed or not.

Secretary **Marsh**. No, it has not, and it is still a factor there. I would be happy to get you an answer to that.

Senator **Bumpers**. Will you promise me Chaffee will be the location if that is resolved? [Laughter.]

That is one of the reasons I got on this because I was so tired of seeing our aircraft and men go to Alaska. That is why I got on this committee, to try to save a little something for poor poverty-stricken Arkansas.

Well, Mr. Chairman, I just have—let us see—one other question and that is—and maybe I should ask General Vuono this question—on Noriega.

PANAMA

As you know, the situation in Panama has evoked a lot of concern about the Canal treaties, particularly to people who never liked that. And so when I go home I am hearing more and more of what if Noriega does this, that, and the other. If Noriega attempted to interfere with the canal and in a way, of course, No. 1, even if it were after the year 2000, it would be a violation of the treaty.

The treaty provides that the canal will be left open for all the world commerce whether it is before or after the year 2000. But just assume that Noriega took leave of his senses for a couple of days and tried to close the canal. How much force would it take to reopen it?

General VUONO. Well, I think——

Senator BUMPERS. Or do anything else.

General VUONO. I think one of the reasons our troops are there and we have reinforced them is to ensure that we can exercise our treaty rights under the Canal Treaty, and I think we can do that.

Senator BUMPERS. We have sufficient forces there now?

General VUONO. I think so.

Senator BUMPERS. One final question, Mr. Secretary. Do you have—I do not want to obviously get into anything that is classified, but it has just been sort of a visceral feel of mine that Gorbachev has probably communicated to Castro the same word he has communicated to a lot of their other former clients. They cannot afford them anymore.

And I am just wondering: Do you have any knowledge or information or feeling about whether or not he has communicated that to Castro?

Secretary MARSH. No; I do not, and I do not know whether the Chief does or not.

General VUONO. No; I do not.

Senator BUMPERS. Would we get a different answer if we were in closed session?

General VUONO. I think you would.

Senator BUMPERS. Thank you, Mr. Chairman.

Senator INOUYE. Senator Johnston.

Senator JOHNSTON. Thank you, Mr. Chairman.

Secretary Marsh, I want to join the chorus congratulating you on a terrific job as Secretary of the Army. I have seen firsthand at Fort Polk the results of what you have done and what has been done recently, and I want to include General Vuono in the accolades here.

The difference in the U.S. Army in late years has been cosmic. We used to see morale not high, discipline not good, weapons systems not in proper quantity, and in general readiness not very good. Having seen those troops in the field at Fort Polk instead of going out for maneuvers, a few times a year, they are out there, what, 4 or 5 days a week every week training with high morale, with good discipline, and excellent readiness as the movement to Panama has shown, and I think you really deserve a lot of accolades.

I do not say that to every Secretary who leaves here. Sometimes I do not say what I think. And so when I tell you you have done an excellent job, a really excellent job for your country, I really do mean it, and that includes General Vuono.

Senator BUMPERS. Will the Senator yield for the great macro question I was going to ask Secretary Marsh?

Senator JOHNSTON. Is this a real question?

Senator Bumpers. This probably the most important thing and I have a tendency to overlook it.

My hometown of Charleston, AR, which is 2 miles from Fort Chaffee, has been using water out of a lake there for 20 years. They wanted to move the pump 10 feet and issued a contract to a contractor, assuming that that would be a piece of cake for $500,000, and the Army has done everything in the world to block that. Now, will you look into that for me?

Secretary MARSH. I sure will. I will be happy to.

[CLERK'S NOTE.—The information will be retained in the subcommittee files.]

Senator BUMPERS. Thank you, Senator.

Senator JOHNSTON. In view of that revelation, I take back what I said about the Secretary. [Laughter.]

CONGRESSIONAL SUPPORT

Secretary MARSH. Senator, I appreciate the comments you made in your opening remarks. If I might respond in this way because, having served in the Congress myself and on the Appropriations Committee, I think it gives me some insight. I am convinced that one reason you are getting the response you are getting today from the American Army and not just from the Army but from our sister services, too, is that those who wear the American uniform know that the Congress of the United States is interested in them and have supported them.

You have done a lot for benefits, pay, and other things. The soldiers know that, and they appreciate it, and they know that this country through their Congress is behind them. You may ask us hard questions and things of that nature, but they know what the Congress has done, and it has been the Congress that has done it. We have simply been the administrators of it.

REPORT ON PANAMA

Senator JOHNSTON. Thank you very much. I agree with that. I was very proud when the President included troops from the 5th Mech to go down to Panama. Some of those are already there, I think; some are still en route. Could you give me a report on how well those are doing?

General VUONO. Before you came in, sir, I gave a little report. They are doing splendidly. As you know, we lifted one company of the battalion by air, and then the remaining element of the battalion is going by sea.

The main body of troops, almost the entire battalion, will close in today into Panama. The ships will be in probably the day after tomorrow. They will unload the ships, but the entire battalion will be on the ground less that element that is with the equipment going down by sea. From all indications that I have as late as midmorning, they are just doing superbly. I think that is a reflection of the quality of the troops and the training and the readiness of that outfit.

By the way, we had no qualms about alerting any battalion that we have right now in the Army for that mission, and we alerted the 5th Mech for that mission. The division commander, of course, made the decision on which battalion he wanted to send.

Senator JOHNSTON. You could have alerted a number, but you picked the best.

General VUONO. They are all good, Senator.

Senator JOHNSTON. Now, General Vuono, as you know, SOUTHCOM is going to be relocated in the United States, and I would hope that the same factors which caused you to pick Fort Polk as part of your transfer to Panama would show the excellent location of Louisiana with reference to Panama for the location of that SOUTHCOM headquarters.

General VUONO. We are in the process now of determining some potential sites again against criteria, and there will be a number of sites that will be looked at over the next several months.

DEPENDENTS IN PANAMA

Senator JOHNSTON. General, I am told that there are about 14,000 dependents in Panama. Some of those have been moved out, those not living on the reservation. Now, it seems to me that the President's options have been greatly limited by having those 14,000 dependents there.

My question is, would his option—and he has, I think, specifically not ruled out or not ruled in necessarily, but he has not ruled out some kind of armed action, and certainly the credibility of that action, it seems to me, is greatly limited by having 14,000 dependents there. Would you agree that that option is limited by those 14,000 dependents?

General VUONO. Well, as you know, we have moved a great number. As a matter of fact, we moved all the command-sponsored Army families who were living off of the military installations. We moved all of those families on military installations, but there are still additional families not command-sponsored who are still living off post, so all of them have not moved onto Army installations right now.

Senator JOHNSTON. Suppose some kind of hostilities broke out there. Would there be any danger at all to those 14,000 who are on the base?

General VUONO. Well, of course, it is difficult to speculate what the scenario would be. But, of course, when the President made the decision, one of the things he said he wanted us to do is to protect U.S. forces and family members in that area.

Senator JOHNSTON. Well, for example, a serviceman was arrested and beaten up and kept for some time and then finally released. If that became a wholesale habit, I assume the U.S. Army would not take that lying down, and that would lead to some kind of protective action, would it not?

General VUONO. I am sure we would not take it lying down and, of course, we would have to determine what the particular situation and the scenario were. But, as I say, our forces are there to protect our soldiers and our family members.

Senator JOHNSTON. Well, it seems to me that—the conclusion I draw from this is not that we should be engaged in hostilities at this moment, but that the policy of accompanied tours is a limitation on options and a limitation on effectiveness of the deployment of our Armed Forces, not only in Panama but elsewhere. Do you share that view?

General VUONO. We in the Army have had a longstanding view, and we still do, that wherever possible when our troops are forward deployed, our family members are a very valuable asset to those soldiers.

I believe they contribute to readiness. When you have a soldier who is with his family, and 56 percent of the Army is now married, and when you consider sole parents, I think it improves discipline and certainly morale. All factors considered, I am a supporter of forward-deployed forces having their families with them.

Now, certainly when you get into situations where there is a potential danger, you want to take necessary action to protect your family members. But I believe that our concept of family members overseas is a sound policy.

Senator JOHNSTON. It is your testimony that our civilians there are under no danger whatsoever?

General VUONO. Do you mean——

Senator JOHNSTON. Our dependents in Panama.

General VUONO. That is a tough question to answer 100 percent in a situation that is a bit unstable down there, but I believe across the board they are in no great danger. I think we have got the necessary resources there to make sure that our family members are safeguarded.

Senator JOHNSTON. Thank you.

TROOPS IN KOREA

Finally, when last we considered bringing troops out of Korea, I believe that was 1981, the PRC and the Soviet Union were in a very hostile mode toward the United States. South Korea was much less affluent in terms of their GNP, their trade deficit, or trade surplus with the United States was very meager, if it existed at all at that time.

Since that time we have made tremendous breakthroughs with the PRC. They are somewhere between a neutral and an ally. I do not know exactly where you would put them on the spectrum, but they are certainly a friendly country. They are certainly not hostile to us.

The thought of the PRC encouraging Kim Il Sung to invade is ludicrous I think. The Soviet Union has enacted glasnost and perestroika. Just yesterday, or just very recently, they announced in China, Mr. Gorbachev, that he is reducing 120,000 troops in the Soviet Far East along the border with China. That is 12 divisions, 11 air force regiments would be disbanded, 16 battleships would be removed from the Pacific fleet.

That combined with the relative peacefulness of the PRC combined with those other factors that Senator Bumpers noted, double the population of Korea, seven times the GNP, would that indicate that the factors that caused us to say that we needed those troops in South Korea in 1981 when we examined that question, would you not say that the elements of that decision are different today, fundamentally different than they were in 1981?

General VUONO. I think there is no question that the environment is changing, but I think one of the reasons that the environment is changing is the stability that our forward-deployed forces have provided. I think that the small number that we have in Korea gives us stability in the Pacific, and as our interests increase in the Pacific, I see those forward-deployed forces in Korea providing a degree of stability that I think is necessary.

Certainly I think it is something that we want to continue to look at over the next several years, but I would not advocate, based on what I know now, that we pull forces out of Korea.

Senator JOHNSTON. General and Mr. Secretary, this committee in the last appropriations bill created what we call a burdensharing initiative involving, among other things, in the appointment of ambassador-at-large in burdensharing and duties on a worldwide basis to secure a better share of the burden. We dictated that the DOD would come up with actual figures of the cost of civilians and dependents abroad.

DOD and the administration has not appointed the ambassador, nor have they given us those figures. They have made, you know, given us some figures which were not consistent with what we demanded.

Now, I think this committee, if I can judge its temper, at least as I hear from some members of it, is determined that we must have an adequate response in burdensharing and if the administration cannot give it to us, I think we are going to do it. And I think Korea is one of the first places we are going to look, because, frankly, I think the case is very strong that those 40,000 troops in Korea or 44,000 troops are not needed.

I think that case is very strong. However, if they are needed, I think the Army and DOD had better start making that case and had better tell us where else we can have a better share of the burden, and if it is important for those troops to be there, I think it is a good place for the Japanese to participate there and other places.

I say this as a good friend of the Army who has the highest respect and you have the highest credibility with me in terms of advice of what we can do. But I think that is what this committee is likely to do.

So, I know it is not your job to appoint the ambassador-at-large, and I know it is not your job to give the figures on the cost of dependents. I would simply say this feeling is beginning to grow even from last year when it was pretty strong.

If you would like to respond, that is fine, but that is my last question.

Secretary MARSH. I think we have your message, Senator, and some of the backup data that I have here shows efforts are being made to obtain the figures and the statistics that you want. I have seen some that the Army has put together on cost and I am confident that you will get the response that you want, sir.

Senator JOHNSTON. I appreciate that, thank you.

Senator INOUYE. Senator Cochran.

Senator STEVENS. Would you yield just a moment?

Senator COCHRAN. I would be happy to.

Senator **Stevens**. Mr. Chairman, I have just been called away, and I apologize for leaving, but I wanted to tell my friend, Secretary Marsh, that some of us had not contemplated this was your last appearance.

Secretary **Marsh**. I hope it will be my last appearance before the committee; yes, sir.

Senator **Stevens**. I do not think it will be. [Laughter.]

I just hope you will keep that in mind. [Laughter.]

Senator **Cochran**. Mr. Chairman, that changes up my remarks. I do want to join those who have commended the Secretary for his outstanding service. I do not think there is any question that he has provided distinguished leadership, very capable leadership during this period of growth and development and reorganization in the life of the U.S. Army, and I commend you for that. And I am glad to call you a friend and wish you well in the future, whatever that future may be.

Secretary **Marsh**. Well, thank you, Senator, I appreciate it.

MISSISSIPPI ARMY AMMUNITION PLANT

Senator **Cochran**. I do want to bring one problem that we have to your attention before moving to some other questions, and that is involving the Army ammunition plant that is located in Hancock County, MI. This is the most modern Army ammunition plant that we have, the only one built since World War II. It represents a $662 million investment, and we understand that because of priorities in the budget, there are no funds being requested for continued purchases of the 155 mm projectiles from that plant, and that is the only thing that is produced at that plant.

And I understand further the Army has estimated that it may cost as much as $70 million to put that plant in mothballs, and I just wonder whether or not that does not mean that we ought to reexamine it and try to reevaluate that decision and if there is an alternative that you let us know what the options are, if there is an option, and I think that surely there ought to be.

Secretary **Marsh**. Senator, I am going to defer to General Pihl on that, but I think you will find that basically what occurred there is that for the type of round that was being produced, the Army built the needed quantities of that round and has moved on to another type of round and that plant does not have the capability to produce that.

I think General Pihl can speak to that in greater detail, but what it is in a way is a form probably of obsolescence or complete stockage of the type of ammunition that it was intended to produce. Do you want to speak to that, Don?

General **Pihl**. Sir, we have moved from the M-483 155 round dual-purpose improved conventional munition [DPICM] into the M-864 base burner round which gives almost a 60-percent increase in range as far as the artillery is concerned.

In the Mississippi Army Ammunition Plant case, that facility was built for the mobilization base to, in a surge capacity, build additional 483's should that need be called for. At $1,700,000,000 in our ammo budget at the present time, given our 17 active Government-owned contractor-operated plants and our 10 inactive plants, we are unable to workload from the 1989 budget all of the plants that we currently have operating.

The choices are indeed very hard as we look around at the active ammo plants and the products that they produce in terms of readiness and deterrents. We certainly will relook that mix because it is not just the Mississippi ammo plant on the table right now. Right now, unless we add $500 million to the ammunition budget, we are facing closing up to four of our plants.

Senator **Cochran**. Let me ask you this. The contractor operator of that plant has indicated an interest in exploring the possibilities of military sales of either that type projectile or others that might be produced at that plant. A decision to defer the shutdown might create that possibility. Would you look into that and give us a response for the record as to what you think about that?

General **Vuono**. We will do that, sir.

[The information follows:]

MSAAP

Mississippi AAP was designed and built to produce the M483A1 155MM dual purpose improved conventional munition. Based on the Army's current and projected funding limitations for procurement of ammunition, the Army's last buy of the M483A1 will be FY89. Consequently, the Army plans to deactivate and layaway Mississippi AAP beginning in January 1990, phased over a two-to-three-year period.

Because of the unique design of this single product plant as well as its high degree of automation to produce the M483A1, conversion to another product would not be cost effective. In addition, any conversion would affect the primary reason for constructing the plant—wartime mobilization and production of the M483A1. It is estimated that conversion to another product would cost $28 million and take approximately two years.

The Army is not aware of any military sales of sufficient quantity to sustain Mississippi production at 240,000 units annually. Any smaller quantities would not be cost effective.

IMPORTANCE OF SEALIFT

Secretary **Marsh**. We will respond to that, Senator.

Senator **Cochran**. General Vuono, I heard you talk about the movement of troops down to Panama. And I was impressed as I think everyone here was the efficiency and the dispatch with which that was accomplished.

And I hope we can add the safety record to something that we ought to applaud.

General **Vuono**. Well, we are certainly appreciative of that, and we are very conscious of the importance of the safety being very good so far.

Senator **Cochran**. One thing I did notice, and that was the emphasis on sealift as a part of the mix in getting the troops and material down to where they needed to be. And that is an important part of the component that we have for moving troops, and we need to move them.

It was interesting when we had the Commanders-in-Chief, the area commands, before the committee earlier this year. Almost each one pointed out the importance of sealift as a very vital component to permit them to do their job to accomplish their mission. Do you agree with that?

General VUONO. Absolutely. The need for strategic lift, both air and sea, is very, very high on our priorities. As I said earlier, it is not in our program, but we are the biggest customers for the use of that air and sealift, and we need it.

RESERVE COMPONENTS ROLE

Senator COCHRAN. One other thing that I remember when we had the Southern Command represented by Fred Woerner, the commander of that command here. He talked about the importance of the Guard and Reserve in actually providing force personnel to fulfill their mission there. And I think he said over one-half of the people they have to rely on and to fulfill that mission in that region are provided by Guard and Reserve personnel. I wondered if that was unusual or if there is that kind of mix throughout the entire U.S. Army in carrying out your mission.

General VUONO. Well, it is about 50 percent, as a matter of fact, maybe a little higher, but the majority of it is in combat support and combat service support in the Reserves.

In the particular case of Southern Command a great number of the Guard and Reserve units are engineer elements. Those kinds of units are down there on training exercises. We rotate them in for 2 weeks at a time and they perform an invaluable service throughout that whole region. I think that is what he was referring to, that they deploy from Conus and go down and work on a project.

It is also extraordinarily great training for the Reserve components and it is a great factor in their recruiting and retention program. I think that is what he was referring to.

Thank you very much. Thank you, Mr. Chairman.

Senator INOUYE. Senator Specter has to leave immediately, and he has requested that he be called upon out of order for just 30 seconds.

Senator SPECTER. Thank you, Mr. Chairman. I would just join in the congratulations to Secretary Marsh, and we hope we see him some more.

And I would ask leave to submit some questions in writing rather than stay.

Senator INOUYE. Without objection, it is ordered.

Senator D'Amato.

Senator D'AMATO. Thank you, Mr. Chairman. I have an opening statement that I would like to put in the record.

Senator INOUYE. Without objection.

Senator D'AMATO. First, let me, if I might, Mr. Chairman, say what a great honor it has been for me to know Secretary Marsh. This is a man of great distinction, who serves his Nation in the highest of traditions and has always been candid and has called them the way he sees them and has always been responsive. When and where a situation can and should be addressed and remedied, he has seen to it. That has been the case if he has had to make a turn down; he has done so with style and with class.

And John, I hope you are going to be with us, to tell you the truth, in some capacity, because you certainly fulfill, I think, the kind of mission that public service is about. And we need more people like yourself. Wherever you go, I know that you are always going to be thinking of how you can aid your country and your President and your people, so I want to congratulate you.

Secretary MARSH. Thank you, Senator.

DEATH IN PANAMA

Senator D'AMATO. General Vuono, are you aware of the death of a Col. Gerald Clark?

General VUONO. Yes; you are speaking of the officer who was in Southern Command?

Senator D'AMATO. That is correct. It was reported that he was killed in a car accident in Panama on February 26 of this year; is that correct?

General VUONO. Yes.

Senator D'AMATO. General, are you aware that of any reports that may have surfaced that would indicate that indeed his death did not take place as a result of a traffic accident, but rather as a result of an explosive device exploded in his car?

General VUONO. No, sir; not at all.

Senator D'AMATO. You are not aware of that?

General VUONO. I am not aware of any of that at all. It was, to my knowledge, strictly an automobile accident.

Senator D'AMATO. Well, let me ask you Colonel Clark's assignment there. Do you know where he was assigned?

General VUONO. Yes; he was assigned to an intelligence position.

Senator D'AMATO. Was it DIA?

General VUONO. A G-2 position in Southern Command headquarters.

Senator D'AMATO. Are you aware of the fact that the day before this supposed accident—and by the way, do we know what kind of vehicle that this accident he was involved with or in; was it another vehicle?

General VUONO. Another vehicle, to the best of my knowledge. Another Panamanian vehicle.

Senator D'AMATO. Do we have any witnesses? Or the people who were involved in that accident, do we know them? Have we talked to them, and do we know their names?

General VUONO. To the best of my knowledge, and I do not have all of that at my finger tips Senator, but to the best of my knowledge there was, as we always do on an accident of that nature, an investigation and the findings were that it was an accident.

Senator D'AMATO. That investigation is not classified, is it?

General VUONO. No; it should not be, sir.

Senator D'AMATO. Then would you make the reports of that investigation if it is not classified available to this senator?

General VUONO. I will do that.

[The information follows:]

REPORT ON COLONEL CLARK'S DEATH

The death of Colonel Gerald E. Clark, Headquarters, United States Army, Fort Clayton, Republic of Panama, was investigated by both the Panamanian government and the United States Criminal Investigation Command immediately following the accident on Gillard Highway, Panama City. Investigations indicate that at approximately 2:20 p.m. on February 26, 1989, a car driven by a Panamanian citizen, while attempting to pass another vehicle, struck that vehicle, and rebounded into the oncoming lane of traffic and struck Colonel Clark's vehicle head on.

U.S. medical personnel from Gorgas Army Hospital were called to the scene and administered CPR. Colonel Clark was pronounced dead at 3:55. Cause of death was determined to be multiple trauma, torn aorta, and a fractured spinal cord. Because the incident occurred in an area under the exclusive jurisdiction of the Panamanian government, Panamanian police investigated the incident and interviewed all witnesses. Their investigative report was provided to U.S. authorities and has been translated and reviewed by your staff. All names of persons involved have been identified. The translated statement of the Panamanian citizen driving the car that struck Colonel Clark's vehicle was also provided to your staff.

U.S. military authorities also investigated the incident and prepared a report. A U.S. military policeman arrived on the scene immediately after the accident. He stayed with the body at all times and went with the U.S. medical personnel who transported the body to a U.S. hospital. The military policeman, who speaks Spanish, interviewed the only witness not involved in the accident who stated:

"At about 2:20 p.m., I saw an accident happen across the Corozal Cemetery, and it developed in the following manner: a white Toyota car passed me and hit another, gold in color, Toyota automobile on one side which [then] headed right, into the ditch, and then collided, head on, against a Toyota car that was coming from Clayton."

The Military Police and Criminal Investigation Command prepared reports of investigation that concluded Colonel Clark's death was the result of a traffic accident. Photographs taken at the scene have also been provided to your staff.

As you requested, the day following the hearing, Major General William Suter, the acting Judge Advocate General, and senior representatives of the United States Army Criminal Investigation Command [USACIDC] arranged a meeting with you to provide the investigative reports and brief you on all aspects of the information. Although you were not able to attend, they met with members of your staff and allowed them to read the entire U.S. and translated Panamanian investigation. Since that time, USACIDC representatives have provided additional information to your staff to answer their follow-up questions.

The autopsy you requested was reviewed by members of your staff. The autopsy, performed by a doctor in the U.S. Army hospital, was also reviewed by the Deputy Medical Examiner of the Armed Forces Institute of Pathology who confirmed the original autopsy and indicated cause of death was a car accident.

There is no evidence that this incident was anything more than a tragic car accident. You asked if Colonel Clark had been "mugged" the day before the accident. The only evidence of any incident was eight days prior to the accident. Colonel Clark reported to the military police that on February 18, an unknown assailant snatched his small carrying bag while he was walking downtown. He chased the idividual, could not catch him, and subsequently reported the incident. Your staff has been provided a copy of Colonel Clark's statement concerning this incident and the MP report.

Senator D'AMATO. To the best of your knowledge, were you aware of the fact that there was a report that Colonel Clark was at the very least assaulted the day before?

General VUONO. No; I had no knowledge of that at all.

Senator D'AMATO. Would you look into that?

General VUONO. I sure will.

Senator D'AMATO. A report that he apparently was mugged.

General VUONO. I have no information that would lead me to believe he had been mugged the day before. None at all. But I will look into it.

Senator D'AMATO. Would that be rather unusual for a colonel in the DIA in G–2 to be mugged?

General VUONO. That would be, if, in fact, that happened.

Senator D'AMATO. Supposing the report does not indicate the names of the people involved in the accident. Would that give you rise to some kind of suspicion?

General VUONO. Well, I would have to go back and look at the investigation report, and I will do that Senator.

Senator D'AMATO. Would that also have the result of the autopsy?

General VUONO. I am sure it would.

Senator D'AMATO. And if that is not classified, you would then make that available?

General VUONO. I would, sir.

Senator D'AMATO. How long, General, before I could have that? Could I have that tomorrow morning?

General VUONO. If it is available, you sure could.

Senator D'AMATO. If it is not classified?

General VUONO. I will go back and look after this.

Senator D'AMATO. And then if it is classified, then maybe I would ask you to make it available under those terms and conditions. If it is classified, I ask you not to see that I am not precluded, Mr. Chairman.

I have been advised by people, not inside of the Government but outside of the Government, that there is a very strong suspicion that Colonel Clark indeed was assassinated, and that he was assassinated by way of an explosive device. And that indeed plastics were detected as it relates in the vehicle.

And there are some—and, yes, they are in media—who believe that there has been a very carefully orchestrated cover up of this. Now, if these materials are classified, I would expect to be told that that is the case. Obviously, as it relates to revealing those details, then that is a different matter. But it would seem to me that at the very least, there are appropriate committees within the Congress who would have the right to undertake, and that is the Intelligence Committee of which I am member, to undertake and ask the questions in camera as to whether or not this is true.

To the people who raised this as a matter, I think, certainly we have an obligation. I know this Senator feels we have a very strong obligation to look into what has taken place.

Because I have to share with you, General Vuono, I have been tremendously unimpressed by General Woerner of the Southern Command, by the lack of candor and by their suggesting policy, when I hear now that it is going to take such a terribly long period of time as it relates to bringing dependants back. I wonder why we lobbied for such a long time—and I say we, I am talking about the Defense Department and the Southern Command, as it is related to taking dependants out of areas that would be constituted ones that would be precarious. There is a catch-22 that if we were to act any more aggressively as it is related to many of the incidents that transpired and took place to our dependants and to the servicemen, we could be endangering the dependants. That is just my personal opinion.

There are some members of the Senate who, I think, share similar views, who were there. I think we have sent the wrong signal there, and I am not deprecating the efforts nor the loyalty of our men, of our servicemen. Not at all, I would not want it to be misconstrued in that manner.

But I do believe that there are a lot of things that we could have been doing, and I am not talking about military adventures that we did not do. And 18 months ago we went through this; 18 months ago we should have begun to undertake the kinds of things that would have sent a clear message to Noriega. And, certainly, we did not. And now we find ourselves—it is an incredible situation.

I have people coming to visit us who work in the Canal Zone and they tell us how they feel exposed and how they feel threatened. A woman came in today, Rebecca Cook, who came in but who called us first from Panama and said she feels very exposed. She lives in a group in five buildings, very close to Noriega's police headquarters. She told how they have been continually harassed. It seems to me that the Southern Command was busy attempting to keep this out of public notice and out of public view and certainly not to let the Congress be aware of these facts.

And there is incident after incident, not the least of which was the stopping of the school buses with 200 children on them. I mean, and then they say, "Well the parents got more excited than the kids." Well, that might be the case, but I just have to register this with you. And I certainly would look forward to you making available that information as it is related to the death of Colonel Clark.

I would be deeply appreciative if you could respond by tomorrow morning. And I am not going to ask the Secretary on that. I do not want to engage him on that.

General VUONO. I just would make one point Senator. General Fred Woerner is in a very critical post at a very difficult time. Everyone will not obviously agree on what is happening down there. But I want to assure you that I personally, and I can speak for my colleagues, have great confidence in his ability to handle that situation down there.

Senator D'AMATO. I am not suggesting he may not have the ability to handle any matters that may arise at this time. I will suggest to you that I think that he minimized the difficulties and that there was a constant stream of allowing the situation to exist and that somehow, some way, that business would be conducted as usual. Do not rock the boat. It was a do-not-rock-the-boat attitude.

And I understand when you have to administer and you have got thousands of people both directly under your command and those who are dependants that that might be the easy way. And I would suggest that that was the attitude, or that is at least one that I perceived.

And I have spoken to the general on a number of occasions, and the kinds of signals that he sent out both to the Congress and to the administration and to Mr. Noriega, whether he intended it or not, it strengthened his hand and gave him the feeling that he could continue and their business would continue as usual. And that is just my observation, and I recognize people have a right to disagree.

But I certainly think, as it relates to the matter of Colonel Clark, that it would seem to me, and you have indicated, that it would be too much of a coincidence if he had this attack and they say he was just robbed on the 25th and then on the 26th he was killed.

To tell you the truth, I have a healthy bit of skepticism. I do not know. And I am not ready to accept without there being a determinative, someone telling me they have looked at this file and they have looked at the autopsy and the autopsy has indicated that the death came by way of collision, whether or not there was an explosion.

General VUONO. We will get you that information.

Secretary MARSH. Senator, I might add to that—that Colonel Clark was an extraordinary officer and many, I think, probably considered him to be the most knowledgeable military expert on Central America. I had a very high regard for him and was shocked by his death. If there are circumstances which you have raised here that are involved, I can assure you that no stone will be left unturned by the Army to try and get you the information that you need, and to address it.

The situation involved with General Woerner is that he finds himself in an very difficult situation. One of the difficulties involves the evacuation of dependants. I was looking at a time line that was pointing toward September once it became apparent that there was a need to urgently move those dependents. I would say to you that General Woerner and his people stepped up to that assignment and completed it with great enthusiasm and, indeed, with considerable haste and efficiency. And I think Carl would agree with me.

General VUONO. Yes; absolutely.

Secretary MARSH. But he is in an extraordinarily difficult situation. I know you have recognized that.

Senator D'AMATO. Mr. Secretary, I certainly do at this time. But again, there are those of us who are not in the military, and that does not mean we may not have a perception of what signals we give, who have urged and a number of Senators that there be the drawdown of dependants going back many months ago.

Now, let me suggest, I have spoken to General Woerner on that and his was an attitude of, no, that would be the wrong thing to do. And then as it relates to the councils within the councils of Defense Department and the Joint Chiefs, I am going to suggest to you that they dropped the ball and that they should have begun that draw down and they should have been advised. You do not leave people out there and in a threatened position.

And so now we are faced with a situation where we do have some urgency attached, and I think the American public and the journalists involved are viewing this with a bit of skepticism. Are we attempting to create a situation? Manufacture? That is what they have to think.

I believe there was no excuse for us in allowing this situation to reach this point, that we should have been well advanced.

In terms of my making that known, this is not the first time. I have shared this, as have other Members of the Congress, with the administration, and with General Woerner and others for a long period of time. So, I think we are just now reaping the seeds of a policy which did not attempt to envision these circumstances.

It certainly would have sent a clear message to Noriega if we had begun that draw down. We did not do it and I am going to suggest to you we did not do it because General Woerner felt it would be easier, it would not as highly charged. That is his reason for having done that, and now I think we are paying the price. I think it was a flawed policy.

PROTECTION OF DEPENDENTS IN PANAMA

General **VUONO**. I would only add the drawdown did start Senator in May 1988 in a very reasoned approach. As a matter of fact, we have drawn down when we started the movement last week: 57 percent we had moved from off-post to on-post in a logical manner.

And so, the drawdown did start. It may not have been as rapidly as you described but we did start it in a measured approach. And we did move 57 percent in, as we had vacancies on the installations.

Senator **D'AMATO**. Well, I am glad to hear that that was undertaken, General.

Thank you Mr. Chairman.

Senator **INOUYE**. Thank you.

[The statement follows:]

STATEMENT OF SENATOR D'AMATO

Thank you, Mr. Chairman.

Yesterday, Generals Pihl and Shoffner testified that the Army depended upon its "sister services" for its sea/airlift. Unfortunately, the Air Force and the Navy have been remiss in purchasing the aircraft and shipping necessary to support Army needs. The shortfall in airlift and sealift is so severe that it casts doubt on our ability to meet fundamental commitments such as our NATO obligation to have 10 divisions in Europe in 10 days.

Years of railing at the Air Force and the Navy have accomplished little. Military Airlift Command and military Sealift Command are none the richer. Perhaps, it is time to put the onus of responsibility for lift where it properly belongs: on the Army.

If the Army were sized to our current ability to lift it anywhere, anytime, would it be 18 divisions? My fear is that we are buying divisions that would never get out of the cornfields of Kansas in a crisis. In the present austere budget environment, I find this difficult to support.

I know you gentlemen will have some thoughts on this. I look forward to hearing them.

Thank you, Mr. Chairman.

Senator **INOUYE**. Senator Sasser?

Senator **SASSER**. Thank you very much Mr. Chairman. Mr. Chairman, I want to add my voice to the accolades that have been hurled here today at Secretary Marsh.

Mr. Secretary, you have done an outstanding job as Secretary of the Army, and it has been a great pleasure to work with you over this whole period of time. We are going to miss you. And I will say to you that I have often felt that the Army has not been getting its just desserts among the three services over the past 8 out of 10 years, but I think you have worked hard to try to redress what I have perceived to be an imbalance and I want to compliment you and thank you for your public service as Secretary of the Army.

Secretary **MARSH**. Thank you, Senator. I have enjoyed working with you.

EXTENDED COLD WEATHER CLOTHING

Senator **SASSER**. Just a couple of things here quickly, Mr. Chairman. First, I will address this to you, General Vuono, on the question of the extended cold weather clothing system for the U.S. Army. Do you favor the purchase of this extended cold weather clothing system?

General Vuono. Yes, sir; I do. As a matter of fact, we are purchasing it, not in the numbers that obviously we would like to purchase it, but we have a plan to buy the cold weather clothing over the next several years, and we have a priority on units that we will equip with that clothing. Some we will equip with a complete outfit, and for some I made the decision to equip them with a portion of it, depending upon the mission and what we expect the troops to do.

Senator Sasser. Well, now, the committee directed the Army to purchase $50 million worth of this extended cold weather clothing system in 1989, and the question comes, Why did the Army follow the committee's directions in that regard? It has been programmed for something else, I understand.

General Vuono. We read the committee's recommendation very carefully and wanted to put the $50 million into it, but as we looked at various priorities, we determined that in 1989 we could not fit all of that into the budget. That does not mean that we are not dedicated to providing that clothing. We just could not provide it on that rapid a scale.

Senator Sasser. Well, let me tell you what my concern is, and also ~~my~~ colleague on this committee, Senator Hollings', and that is that the Defense Department encouraged the apparel industry to gear up for this particular item of apparel and guaranteed that these purchases would take place over a 3-year period.

Now, most of this military apparel is made by small business people, and it has been my experience in watching them operate that they operate very, very close to the margin, and I think the military does a fantastic job of getting 99.9 cents worth of worth for every dollar that they spend on this clothing. In other words, there is just not much of a profit margin in it. And the taxpayers get a heck of a bang for their buck out of it.

Now, what we get into, though, is when these small business people gear up for this apparel manufacture, with the clear implication coming from DOD and encouragement coming from the Army that we are going to buy this stuff pretty rapidly over a 3-year period, and then you get into a 5- or 8-year stretchout. What you do is end up putting these little companies on the edge of bankruptcy. And when they suffer, I think, the Army suffers because it means there will be less competition the next time you go around for the clothing, and you will end up rather than getting a half a dozen or 20 bids end up getting maybe one or two.

And so, that is really my interest in it, and I suspect that Senator Hollings' interest and some of these little apparel manufacturers that do, I think, terrific jobs for the Army and for the military generally. There are a couple of them in my State. They are scattered around. It is a tough business. I have seen them operate and one reason it is tough is because DOD, I think, drives a very hard bargain with them.

And so I want to encourage you, General, to follow the directives here of the committee, and I think in the long run the Army is going to be better off for that. I think you will have better suppliers that will supply you at a cheaper price, and we do not want to drive some of them under if we can possibly avoid it.

As a matter of fact, I am advised that this particular clothing is so popular that in some of our colder climates part of the cold weather clothing system has been requested by commanders for sale at local PX's and some of the troops are actually going out and buying some of it at their own expense.

Perhaps that is the ultimate goal here, to get the troops to buy their own clothes. We might save quite a bit of money doing that. But I say that in jest. But it is, I think, an item that you might want to look into.

General VUONO. We will do so.

Senator SASSER. Let me just say one other thing.

Senator INOUYE. Would the Senator yield at that point?

Senator SASSER. I will be delighted to yield to the distinguished chairman.

Senator INOUYE. I want to add my voice to this, not because of the item involved and not because of the amount involved and not because of the small business involved, but there is a principle here. There is report language which is very clear. It was a conference report which indicated that both the House and Senate concurred with this. I do not know where this is going to be made or what good purpose it might serve, but it was a decision of the Congress of the United States, and I am certain you agree that this Congress has been very decent with the Army.

General VUONO. It has, sir.

Senator INOUYE. And I would have to look upon this as disregarding the—a directive of the Congress.

If what you say is correct, that you are not in a position to use these funds, then I think the proper thing you could have done was to have a recission. Now, when you say that we cannot use this money, we are going to use it for something of higher priority, then that I think is a rather flagrant disregard of the directive of the Congress of the United States, and that is the issue involved as far as the chairman of this committee is concerned.

General VUONO. There was no intent for any flagrant disregard, Mr. Chairman. We did not feel that it was a directive in nature for us to do that, and I will have to check to see if we came back to the committee to let you know we were not going to use it for that means. I am not sure whether we did or not. I will have to find that out.

Senator INOUYE. Thank you very much.

[The information follows:]

On 8 February 1989, the Under Secretary of the Army informed several Congressmen by letter of our intent to limit funds for the cold weather clothing system to less than that amount desired. However, as of June 1989 we now expect to acquire the $50 million worth of clothing prior to the end of FY89. This is now affordable, as some War Reserves purchases have been identified which were not previously counted and a reprogramming action is being proposed to provide the final increment of funds.

Senator SASSER. Thank you, Mr. Chairman. One final observation, General Vuono. You indicated a moment ago prior to the questioning from Senator D'Amato as an aside that you favor dependents being stationed abroad with our military personnel.

DEPENDENTS IN EUROPE

I must say to you, sir, that I have some reservations about that. I remember when Senator Stennis of Mississippi was the chairman of this committee, chairman of the full Appropriations Committee. He had a longstanding concern about the number of U.S. military dependents that were in Europe. I share that concern.

You, sir, are a distinguished general officer and Chief of Staff for the Army and an excellent Chief of Staff, and your views carry great weight with me and with, I am sure, all members of this committee. But something that has always concerned me is the fact that we have over 330,000 civilian employees and military dependents in Western Europe. And if we ever got into an all-out war in Western Europe, I fear that our troops' first concern, many of these young troops, would be for their wives and for their babies. If I were in their situation, that would be one of my primary concerns.

And then you have got the logistical problem of trying to evacuate these people and care for them. And within the context of that, I mean, I understand the morale factor and the inducement for reenlistment that I am sure is a concern to you. But we see here now this whole issue being raised by Senator D'Amato regarding a post that has heretofore been viewed as totally secure, that of military dependents being in Panama.

We have been accustomed to viewing Panama as a totally safe situation and certainly evacuation possibilities there are much better than they would be in trying to get people out of Western Europe if we got into an all-out confrontation with the Soviet Union. But I just say that by way of telling you that there are some on this committee who do not share 100 percent your view on the question of military dependents.

General VUONO. I understand.

Senator SASSER. Do you have any response to that?

General VUONO. I will stick by my earlier statement that I firmly believe that family members overseas are an important aspect of the readiness of our forces. Notwithstanding the situation that we are faced with in Panama right now, I believe that they are necessary for the soldiers we have overseas.

Senator SASSER. Well, now, we do have unaccompanied tours to South Korea, do we not?

General VUONO. Yes; we do.

Senator SASSER. What is the rationale for the tours being unaccompanied to South Korea but being accompanied to Western Europe if they are also unaccompanied to Okinawa, are they not?

General VUONO. Our soldiers in Okinawa, the Army soldiers in Okinawa have their families.

Senator SASSER. Well, the Marines do not have theirs there.

General VUONO. That is right. We have a mix of accompanied and unaccompanied soldiers in Korea. We do have a number of family members over there that are command-sponsored although the large bulk of the soldiers there are there unaccompanied. That has to do to a great degree to the capabilities of Korea and particularly of the Army to provide the quality of life for those family members in Korea.

That is not the case in Germany and elsewhere.

Senator STEVENS. Well, how would we propose—just for a moment, how would we propose to evacuate these dependents out of Western Europe in the event of conflict?

General VUONO. Well, we have very extensive evacuation plans which we exercise and every soldier and family member there is involved. They are good plans and they are exercised, and I am satisfied with those plans.

Senator SASSER. But we are talking about occupying a substantial number of aircraft and vehicles, et cetera, with evacuating dependents as opposed to supporting the troops at the front, are we not?

General VUONO. Well, these would be our aircraft that would be backhauled after bringing in elements from the States, and they would be backhauled out in a very, I think, logical fashion. The plans are logical.

Senator SASSER. Thank you, General.

Senator INOUYE. Thank you very much, General. I, too, had that concern. Before I went on my trip to NATO, but after reviewing the situation and doing my own investigation, I am personally convinced that your approach is the correct one. I am convinced that if men were required to serve unaccompanied, say, in NATO, your rate of alcoholism would rise, your rate of family problems would certainly rise. You will have more divorces. Morale will definitely go down through the floor, and all in all, the quality of your men, I think, would suffer.

General VUONO. I agree, sir.

Senator INOUYE. And their readiness. I think the Army is correct in this and I am satisfied that the evacuation plans you have make sense. After all, you are not going to evacuate when the bomb drops. It will be done, hopefully, at least a month before then.

General VUONO. Yes, sir.

GUARD AND RESERVE EQUIPMENT

Senator INOUYE. I have a few questions I would like to ask. Congress has annually increased equipment purchases for the Army, Guard, and Reserve, but the General Accounting Office recently told us, and I am quoting because it is very important:

> The Reserve components have not received the full benefit of the Guard and Reserve equipment appropriation because it has been partially offset by reductions in the amount of equipment the services plan to buy for the Reserve components.

More specifically, in 1986 we in the Congress added $897 million in dedicated procurement for the Guard and Reserve. The Army then reduced procurement plan for the Guard and Reserve funded in the Active Army accounts by $541 million. And according to the GAO, as a result the Guard and Reserve only received an additional $356 million when Congress intended to increase by $897 million.

Now, the question is, would the Guard and Reserve do just as well if we did not appropriate this additional amount?

General VUONO. I would have to go back and review those figures, Mr. Chairman, because I do not have them at my fingertips. But I believe that the Army strategy for equipping forces is sound.

We equip based on those organizations that are first to fight organizations, be they Active or Reserve components, because we have a number of Reserve component units that are very high in our deployment scheme. They are equipped along with the Active, whether it is Abrams tanks, Bradleys, Apaches, or whatever it might be.

I think dedicated procurement causes me some difficulty because it reduces my flexibility to adequately equip the entire force, both the Active and the Reserve forces.

I believe that our Reserve component readiness figures from 1985 to now in the area of equipment on hand bears out the fact that we have very prudently equipped those first to fight Reserve component units properly. We have increased somewhere from—well, I cannot go into the numbers because they are classified, but I assure you that we have improved tremendously the equipment on hand readiness of the Reserve components.

Senator INOUYE. Mr. Secretary, I watched your presentation earlier this afternoon with great interest because you had a slide showing the procurement objectives for some of the major weapons systems, and yesterday General Pihl also presented a slide with the objectives for the armored forces, and so I asked my staff to do a little checking, and I gather that there is some difference.

For example, in your slide you indicated that the M-1 tank and the Bradley fighting vehicle, you would be asking for about 7,000 of each in round figures?

Secretary MARSH. The ultimate goal on the M-1, I think, is around 7,400 or 7,500.

Senator INOUYE. And according to General Pihl's slide, M-1's—10,557 and Bradleys, 8,464.

Secretary MARSH. The reason for that, Senator, relates to a decision when the goal was 7,500 for the M-1. The decision was to take an additional 3,000 M-60A3's and put those into the Guard. I think General Pihl's slide reflected a 10,500 goal that was based on putting the M-1's into the Guard instead of the M-60A3's.

General PIHL. That is correct.

Senator INOUYE. Well, I am glad that we are able to clear this up.

General VUONO. Mr. Chairman, that is the plan, of course, to equip the Guard with M-1 Abrams tanks.

General PIHL. I think it is quite consistent, sir, for the Secretary to compare where he was in 1980 and the 6,668 Bradleys and the 7,059 M-1's that were the Army's objective at that time. The heavy force mod plan that I laid down for you yesterday is our revision, given the reality of the threat and the arrival of the future Soviet tank II.

We are going to have to change our first line tanks to all M-1's eventually, and that is the goal I showed you yesterday.

Secretary MARSH. One of the points I wish to make with the committee, Senator, is that occasionally there is talk about the Army possibly becoming hollow if certain modernization programs do not come through.

The point I was trying to make is that in 1981 and 1982 the goals that we set for the Army, like the M-1 tanks, 7,500, has almost been achieved. The goal for the Bradley has almost been achieved. The Apache helicopter when you first talked about the Apache, at one time we were talking in terms of 446 that we wanted to build. We are well past that. The point I am trying to make is that over the original objectives have been obtained. What we are seeing now are new objectives and new goals.

SUPPORT IN KOREA

Senator INOUYE. Two of the members of the subcommitee brought up the matter of reduction of forces in Korea. I am certain you are aware that there are many other members of this subcommittee who agree that there should be some consideration of a reduction of forces, not the total withdrawal, but say leaving one brigade there instead of a division.

In your response Mr. Secretary to, I believe it was Senator Sasser or—Senator Bumpers, you made an analogy of the Berlin Brigade. If my recollection is correct, the Berlin Brigade is paid for by the Germans. They pay for everything there. Do the Korean's pay for our troops in Korea?

Secretary MARSH. First, I would say to you that Korea does have a number of programs that relate to support of United States forces there, including the construction of certain significant infrastructure facilities. It has a different name than is used in NATO for infrastructure. The point I was making was that there is a symbolic significance to the presence of United States forces in Korea, just like the Berlin Brigade is a significant symbolic presence for American defense of West Berlin.

You are correct. Much of the costs that are associated with the presence in Berlin are funded by the West German Government. But the point that we are trying to make with Korea is that our presence there is a symbolism for the defense of the Pacific. I will tell you that if you look at intelligence reports, one of the most unpredictable regimes in this world is the North Korean regime. There is, in my view, ample reason to be very, very careful about what move they may make, because I would say to you that it is unpredictable.

Senator INOUYE. The question members are asking, do you need a division or a brigade to get a trip wire?

Secretary MARSH. Well, currently you do not have a full division now in Korea. You have what we call a bob-tailed division. General Vuono can speak to it better than I, but it is not a full division. I think that the integrity, the military integrity of the unit, in my view at the present time, is about the right size for what it is expected to do. General Vuono may want to address it.

General VUONO. I think we signal our presence over there through a division flag. It is not a full division in that we have rounded it out with a number of Korean soldiers called KATUSA's. It is heavily fire-power oriented. That division is structured that way for specific reasons. You do not need as many soldiers as you need fire power and aviation elements. I believe that a flag, a division flag, is a symbol of stability there, and that I would be very, very concerned if we pulled it out.

WESTCOM FOUR-STAR BILLET

Senator **Inouye**. The first question that Senator Stevens asked related to the change in the command structure of the Alaskan forces. Now they are under CINCPAC. WESTCOM will have responsibility over the 6th Division. Does that mean that we will be recommending a four-star billet in WESTCOM?

I ask this very seriously because that general will have to represent the United States in the Pacific area and I am certain you are well aware that these stars make a difference as far as protocol is concerned, and if he has to deal with a four star in Korea or Japan, it makes it, I think, rather difficult.

General **Vuono**. Mr. Chairman, I know you are serious and so am I. I was just looking at the Secretary because we have been down this road before. We submitted that as a potential nomination for a four-star billet because we felt, just for the reasons you suggest, that not only with the U.S. troops that are under his command, but also the representation and what he represents with the number of armies in that area who look to the U.S. Army in that region. We believe his ability in that region would have been enhanced if he would have been a four star.

That was not accepted, as you know, at the time. With the addition of the 6th Infantry Division and the restructuring, we are in the process of relooking that right now. We have not come to a final determination on just what we are going to do.

We do believe that it makes sense to make it the U.S. Army Pacific as a component command, with certain elements under them to include the Army forces in Alaska. But whether we come over as a recommendation as a three star or four star, we have not sorted that out yet.

Senator **Inouye**. I have many, many other questions, but I would just like to submit all of them for your response and ask just one more.

CLOSE AIR SUPPORT

I am personally concerned about the matter of air support for our ground forces. And sometimes I get the impression that there is not enough coordination between the Air Force and the U.S. Army and, therefore, we are not producing aircraft that would carry out the mission as you envision it. Is my observation off base, or does it make sense?

General **Vuono**. Mr. Chairman, the Secretary and I have been discussing this for some period of time in terms of the close air support mission. I would report to you that there is no disconnect between myself and General Welch, Chief of Staff of the Air Force, in terms of the Air Force's handling of that mission and our agreement that the Air Force should handle the close air support mission.

There is also no disagreement on the concept of ground use and ground employment of forces and the inherent capability that close air support gives us. There is no disagreement on the requirements that the ground commander has for close air support and the kind of the aircraft we need in terms of survivability, lethality, maneuverability, and so forth, in support of how we intend to fight.

It is then the Air Force's responsibility, and readily accepted by the Air Force, that they will provide the air frame to meet the Army requirements based on how the Army intends to fight. General Welch and I have been through that in great detail together. And I am absolutely convinced that the Air Force will provide us the kind of close air support necessary for us to accomplish our mission on the ground.

Senator INOUYE. Is the F-16 sufficient?

General VUONO. If it meets all the requirements that we have laid on, yes, it is. I believe it will meet those requirements. There is a series of tests that will be ongoing to determine that. I believe that that air frame, properly configured, can meet the requirements that we have. But, I am not technically qualified to determine which air frame meets it. I am assured that the Air Force under General Welch will give us the air frame that meets my requirements.

Senator INOUYE. Chairman Robert Byrd of the Appropriations Committee will be submitting questions on the Army Reserve command structure and he wishes to have you respond to those questions, sir. I also have a statement from Senator Wirth that I would like to put in the record at this point.

[The statement follows:]

STATEMENT OF SENATOR WIRTH

Mr. Chairman, thank you for the opportunity to speak today concerning Fiscal Year 1990 appropriations for the Department of the Army. I would like to focus my remarks today on a matter of vital importance to this nation: the use and development of supercomputers.

Later this year, the Department of the Army will for the first time establish an Army High Performance Computing Research Center. This center will provide research into large scale scientific computing to meet the Army's supercomputing needs as well as provide a basis for effective utilization of advanced computing techniques. I would like to underscore the importance of advanced, high performance computing to the national security of this country.

The use of supercomputer technology in the defense and intelligence communities around the world is widespread and growing. Unfortunately, however, this is also an area where the United States is in danger of losing its current technological lead to foreign competitors. Mr. Chairman, given the security applications of supercomputers, this is an area where we can ill afford to lose our traditional world dominance.

Last month, the Japanese computer company NEC announced that they will soon begin to market a supercomputer that is 1.2 times faster than the fastest computer available in the United States. Still more alarming are the announcements that a major American company will leave the supercomputing field altogether, and that the leading American company in the supercomputer field posted a significant loss during the first quarter this year.

I urge the subcommittee to recognize the necessity of an increased federal role in this field. The development of new, faster and technologically advanced supercomputers involving long lead times and substantial capital investment. The long term strategic importance of this technology to the national defense demands that the federal government take a more active role in the development of new, more advanced supercomputers.

I recognize that this burden must be shared by several different federal agencies. However, given the vital importance of supercomputing and the initial efforts of the Department of the Army in this area, I again urge the subcommittee to support Department of Defense participation in this vital technology.

Thank you, Mr. Chairman, for this opportunity to address the subcommittee.

Senator INOUYE. Well, I had a little speech ready here, Jack, but I gather from all the conversation we have had around here that you may be coming back again.

Secretary **Marsh**. No; I will be leaving Senator, very shortly.

Senator **Inouye**. Well, if you are I am sorry to see you go. I concur with the sentiments of my colleagues on this committee. You have done a great job, and on behalf of the men and women who serve in the State Hawaii and the command there, I thank you very much. Your concern for the morale, welfare, recreation in Hawaii is very much appreciated. The way we are developing Fort DeRussy, I think, is a credit to the Army. The programs you have had on child and spousal abuse, I think, are very forward thinking. The community can look into programs that you have initiated there.

And, so with that, I would like to thank all of you here for spending your time with us this afternoon to present your fiscal year 1990 budget. Your statements in combination with the testimony which was presented to us by Generals Pihl and Shoffner yesterday, as well as previous hearings with various commanders and CINC's, I think will provide us with a rather thorough overview of the posture of the Army.

As the new chairman of this subcommitee, I look forward to working with all of you as we begin our action on the fiscal year 1990 defense budget. I will be spending more time in the field, and I want to thank General Pihl once again for the time he spent in escorting me through Aberdeen. I think that that was one of the best times that I have spent on this committee. And I hope to do the same for other services.

SUBMITTED QUESTIONS

We will be submitting additional questions from various Senators for your response in the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR INOUYE

INVESTMENT VERSUS OPERATING COSTS

QUESTION. Mr. Secretary, the Army spends about 75% of its budget to pay and operate its forces, and the remainder for investment. This is much higher than the Defense budget as a whole, which devotes about 59% to operations.

How can you meet your equipment needs by only devoting 25% of your budget to investment?

ANSWER. It must be recognized that the Army is the most people intensive organization within the Department of Defense. We require a higher percentage of our budget resources to pay and operate our forces. Resourcing the Army to accomplish its strategic and conventional missions calls for the right mix of readiness, modernization, force structure and sustainment. The Army has revised its budget and made the necessary adjustments to produce the optimum mix and balance among these areas within the resources we were provided.

QUESTION. General Vuono, what percent of your budget is required for investment to ensure that you are equipped to perform your wartime mission?

How close are you to the margin?

ANSWER. There is not a precise and applicable percentage to measure if the Army is equipped to perform its mission. Reductions to the Army's budget authority forced us to reduce the acquisition of a number of important combat and support systems in order to protect essential readiness. The Army will continue to accomplish its mission -- deterring war -- by accepting an increased degree of risk in equipping our force. Careful applications of our resources will still produce a balanced program for a trained and ready Army.

QUESTION. General Vuono, I agree that readiness must be the number one priority of the Army, but what good does it do you to have a ready force if it is not equipped with modern weapons?

ANSWER. Our goal is to modernize to improve our warfighting capability against potential threats. The quantity of modern equipment currently fielded is less than we would like in confronting the size, capabilities, and complexity of the threats we face worldwide. The revised budget will still improve our posture in the future, but at a pace that is cause for concern. We cannot indefinitely continue to place at risk the qualitative edge that we must have to offset the quantitative and geographical advantages of our principal adversary.

QUESTION. General Vuono, as we curtail equipment purchases, we must keep older equipment in the force longer. And as equipment ages it gets more costly to maintain increasing operating costs. As operations costs go up we can afford to buy less equipment.

Are we facing this problem with the emphasis on readiness today, instead of modernizing for tomorrow?

ANSWER. Despite a quality and ready force being our highest priority, our modernization programs continue to replace aging equipment that characterized the Army a decade ago. The revised Army budget keeps all our basic modernization plans on track. Due to severity of budget constraints, we have acted in accordance with Army priorities to accept some degree of near-term risk in order to assure future capability to achieve overmatch with respect to the worldwide threat.

STRIPPING COMBAT CAPABILITY

Question. General Vuono, many of your force structure proposals appear to retain overall force structure while reducing combat capability. With your decision to inactivate a combat brigade at Fort Carson, the Army will have eliminated two active combat brigades during the past two years -- yet on paper the Army officially maintains 18 divisions. You are reducing the number of aircraft and crews in Apache helicopter units, but the number of units remains the same.

General, why did the Army choose to cut force structure in this manner? Would it not be better to have fewer divisions, but at their full combat strength?

Answer. These force structure cuts were made strictly for affordability reasons. The Army today, is too small to accomplish all of its assigned missions. I suggest the Army should be sized to be half-again as large as it is now to execute the national military strategy with a reasonable degree of risk. Recent force structure reductions increase the risk to the Nation even though we have applied our best military judgment on how to absorb the cuts while retaining the most combat capability possible to minimize that risk. We did not want to create a "paper" Army.

To establish a decision rationale for the force structure reductions, we looked at the threat, strategy, and available resources. We determined we must: maintain our forward deployed, deterrent forces; avoid cuts in our contingency and special operations forces; and avoid building "hollow units" by thinning out force structure. Based upon this, the Army concluded that force structure reductions would be best accomplished by inactivating units and that the most appropriate -- offering the least amount of incremental risk -- to inactivate were the reinforcing, later arriving divisions based in the United States. Further, the Army made a deliberate decision to replace, by rounding out, the combat capability of cut active units with brigades from the reserve components. The decision to inactivate a CONUS reinforcing divisional maneuver brigade flowed from this analysis. In doing this the Army retains sufficient forces to accomplish strategic missions and the flexibility to respond to the NCA in a crisis.

The cuts to our aviation programs have been difficult. Changes to aircraft and crew levels in our Aviation units were already planned and are now being accelerated because of the budget environment. Procurement of the AH-64 APACHE helicopter will be discontinued after the FY91 buy. We plan to inactivate 7 Helicopter battalions. Programmed dollars will help offset the developmental modernization costs of the Army's new generation of helicopters - the LHX.

Budget reductions are difficult to absorb. Our intent was and is to organize, train, equip, and field an Army capable of accomplishing the missions required by the national military strategy with the least degree of associated risk possible.

QUESTION. The Army has 270 thousand civilians to support 772 thousand military end strength. This is a ratio of 1 civilian for every 2.8 military. The Army budget proposes to eliminate 7,900 military end strength, but only 645 civilians.

General, if the Army is cutting support structure along with combat force structure, then should not the reduction in civilian end strength be more proportionate -- on the order of 2,700 end strength?

ANSWER. The Army has 404 thousand civilians performing every job imaginable in support of Army missions. Civilians not only provide direct support to the soldier, but also perform critical functions such as developing, procuring, storing, maintaining and distributing weapons and equipment as well as providing medical support, training and communications. The civilian component gives the Army the flexibility to continue operations and to respond quickly to new or changing missions. The civilian reductions you address, 645 for FY 90, result primarily from reductions in our intern program associated with reduced funds.

Significant dollar reductions since the FY 89/90 President's Budget have caused the Army to reduce its civilian work force by approximately 12,000. New missions, transfer of functions from other Services, and the realignment of command priorities have added to the Army's total force structure, but have not lessened the mission impact of the overall civilian strength reduction. Any decreases will severely impact on the Army's ability to support current mission requirements and quality of life programs. We are concerned about how the civilian reductions will affect the role of the soldier in current operations. At the same time, we are sensitive to the use of borrowed military manpower and its effect of degrading readiness. Although funds have been cut, support functions have not been decreased. Therefore, the use of borrowed military manpower to keep programs functioning is very likely. We are assessing the impact of the past reductions and do not believe that further reductions in the civilian work force are appropriate at this time.

CATCHMENT AREA MANAGEMENT OF HEALTH CARE

QUESTION. All of us are concerned about the quality and increasing cost of providing health care to active duty military, their dependents and to retirees. One of the many tests now being conducted, in an effort both to improve quality and to contain rising costs, is the concept of Catchment Area Management whereby a military medical commander has the responsibility for administering health care funding in a "catchment area," typically an area within a 40-mile radius of a military medical facility.

The Army has responsibility for one of the first Catchment Area Management programs at Evans Army Hospital, Fort Carson, Colorado. I know that this program at Evans started in October of 1988.

Do we yet have any sense of whether the catchment area approach is likely to improve the quality of health care while, at the same time, containing cost growth?

Is Evans Army Hospital being fully utilized?

ANSWER. The U.S. Army is confident that the Catchment Area Management (CAM) concept will contain the rate of growth of medical care costs and assure the quality of care provided to eligible beneficiaries within the demonstration area. The Assistant Secretary of Defense (Health Affairs) delegated authority to the Secretary of the Army to implement the CAM demonstration on 16 December 1988. Under the current phase of the implementation schedule, Evans Army Community Hospital (EACH) has begun expanding its internal capability to provide additional inpatient and ambulatory services. Beginning on or about 1 August 1989, the enrollment feature of the demonstration will begin. Services provided from civilian alternative treatment settings under agreement or other arrangement with EACH, are scheduled to begin 1 October 1989. Workload generated by Evans Army Community Hospital has dramatically increased since CHAMPUS funding was used to increase staffing within the medical treatment facility. However, it is too early to evaluate changes in CHAMPUS expenditure data within the catchment area. Moreover, the RAND Corporation will be conducting an independent evaluation of all the Service demonstration sites.

Tooth-to-Tail -- Force Structure

QUESTION. General Vuono, if Congress approves the Army's force structure proposals, the Army will have eliminated 7 maneuver battalions in two years, and will have downsized its attack helicopter units. If Congress approves your changes, what would the Army not be able to do in FY 90 that it can do now? What missions or commitments would the Army not be able to fulfill?

ANSWER. Army force structure requirements are significantly greater than the amount it can field within constrained resources. As a result, there already existed a degree of risk in the Army's ability to accomplish its strategic missions. Since no significant changes to the National Military Strategy occurred concurrent with the FY 89 and FY 90 budget reductions, the Army's missions and commitments within that strategy did not significantly change.

Although the Army inactivated two Active Component brigades as a result of budget reductions, it can continue to accomplish all of the missions and commitments it has based upon the current National Military Strategy. However, since there are fewer forces available, the amount of risk associated with the Army's ability to accomplish those missions increased.

More specifically, budget reductions in FY 89 and FY 90 caused the Army to inactivate two Active Component maneuver brigades and establish brigade roundout relationships in two CONUS-based reinforcing divisions [4th ID (M) and 9th ID (MTZ)]. The Army determined that these reductions were the most prudent courses of action to meet the budget constraints and retain forces to accomplish missions associated with the National Military Strategy. In doing this the Army retained "essential" forward deployed, deterrent and contingency forces while reducing some capability in its reinforcing group of forces. While these actions retained the Army's strategic capability to accomplish all of its missions associated with our present National Military Strategy, the Army assumed greater risk in its ability to accomplish those missions.

QUESTION. Secretary Marsh, the Army elected to eliminate a combat brigade at Fort Carson rather than eliminate all Pershing II personnel from NATO. Could you explain how this decision was reached? Why did the Army elect to eliminate a mechanized brigade at Fort Carson?

ANSWER. To establish the Army's rationale for approaching force structure reductions we looked at the threat, strategy, and available resources. Based upon this work and the size of the mandated force structure reduction, we determined we must: maintain forward deployed, deterrent forces; avoid cuts to our contingency and special operations forces; and avoid building "hollow units" by thinning out unit structure. Based upon this, the Army concluded that force structure reductions should be accomplished by inactivating units.

The recently concluded INF Treaty provided an opportunity to apply some INF spaces to the force structure reductions. That is, spaces most directly associated with INF-related units were applied by the Army to achieve its mandated force structure reduction.

Thus, the Army determined that the force structure reduction would be split between forces in Europe and the United States. In focusing upon the European part of the force structure reduction, the Army determined that maintaining ready and fully structured forces in Europe precluded the removal of all INF associated spaces. A portion of these, approximately 2900 spaces, were retained for conversion to resource a planned opposing force and operations group for a Combat Maneuver Training Center at Hohenfels, Germany; repair unit design deficiencies; and upgrade undermanned CS/CSS units. As a result of this, the Army identified 3481 spaces from European-based troop units to apply to the 7929 space total and was able to achieve necessary force structure changes in Europe without changing the European troop strength ceiling.

In order to achieve the total number of remaining spaces, the Army focused upon the reinforcing group of forces based in the United States. The 4th Infantry Division (Mechanized) is the only divisional-sized unit organized with three active component brigades in this group. Due to the size of the force structure reduction and the amount of spaces needed to meet it, the Army decided to inactivate one of the 4th Infantry Divisions's (Mechanized) active component brigades. Inactivating one brigade and establishing a brigade roundout relationship had the least impact upon the risk associated with the Army's ability to deter and fight or respond to crises. Furthermore, this course of action maintained the Army's strategic flexibility by retaining 18 active divisions, maintained the integrity of the United States' M+10 requirement to NATO, achieved a greater degree of standardization in the heavy force, and avoided long term modernization costs.

QUESTION. General Vuono, the Army has eliminated two combat brigades in the last two years. Why is the Army choosing to cut tooth instead of tail?

ANSWER. Actually, we cut both. We also took out the small "tail" that is part of the inactivated brigade. The larger answer to this question lies at the heart of the Army's responsibility to organize, train, and equip forces to accomplish its missions associated with the National Military Strategy. To meet its strategic requirements, the Army must seek to maintain a range of capabilities within constrained resources. That means the Army must maintain combat, combat support (CS), and combat service support (CSS) capability to accomplish its missions and seek to balance them against the amount of risk we are willing to assume. Furthermore, in order to field the most capable Army within available resources, a mix of Active and Reserve Component units exists in each of the unit categories.

At this time the Active Component Army contains approximately 58% of the combat units, 42% of the CS units, and 30% of the CSS units. The balance of forces exist in the Reserve Components. The rationale for this approach is that the Army's first mission is to support the Nation's defense policy of deterrence. In that regard, combat capability deters. Therefore, in the past, in order to field a strong combat capability, the Army assumed some risk in CS/CSS capability in the Active Component. As a result the Active Component Army is already very lean in its CS/CSS capability relative to its current combat capability. Given this situation and the fact that both the FY 89 and FY 90 budget reductions affected only Active Component end strength, the Army determined that it was more prudent to assume a greater degree of risk in its combat capability rather than to further reduce CS/CSS capability. Consequently, the majority of the force structure reductions over the last two years involved the inactivation of two combat brigades rather than CS/CSS. I might add that when the active brigades were inactivated they were replaced with Reserve Component brigades to "round-out" the divisions affected. The end result has been, in my mind, a solution which retains as much combat capability as possible. This approach was determined to have the least risk to the Army's ability to field the most capable force possible to accomplish our strategic missions in light of the severe fiscal constraints.

GUARD AND RESERVE END STRENGTH

QUESTION. General Vuono, the Army Reserve Components have fallen short of their end strength goals every year since 1986. Last year, the Army Reserve end strength was 312,000 versus 320,600 end strength budgeted.

General, why are the Army's Reserve Components falling short of their end strength goals? What is the status this year?

ANSWER. Budgeted end strength for the Army National Guard is comprised of two parts: drill strength and Active Guard/Reserve (AGR). The Army Reserve adds a third part, Individual Mobilization Augmentees (IMA). FY88 shortfalls were in drill strength and IMA as shown below:

ARNG FY88

	PROGRAM	ACTUAL	DELTA
Drill Strength	431,545	429,523	-2,022
AGR	25,725	25,659	-66
TOTAL	457,270	455,182	-2,088

USAR FY88

	PROGRAM	ACTUAL	DELTA
Drill Strength	292,591	287,604	-4,987
AGR	13,329	13,341	+12
IMA	14,680	11,880	-2,800
TOTAL	320,600	312,825	-7,775

Programmed drill strength was not achieved because accession mission fell short (ARNG in non-prior service/USAR in prior service) and losses exceed initial forecasts.

The Army Reserve contrained IMA end strength below the requested budget level in order to provide Reserve, Personnel Army (RPA) money to higher priority training missions (e.g., newly commissioned basic officer training, nurse training).

As of the end of April 1989, strength is as follows:

	ARNG FY89		
	PROGRAM	ACTUAL	DELTA
Drill Strength	429,737	425,995	-3,742
AGR	25,418	25,594	+176
TOTAL	455,155	451,589	-3,566

	USAR FY89		
	PROGRAM	ACTUAL	DELTA
Drill Strength	287,849	286,166	-1,683
AGR	12,700	13,008	+308
IMA	13,504	11,037	-2,467

The combined actual strength is 99% of the program. A concerted efforts is being made by both Components to achieve end strength by the end of the fiscal year.

QUESTION. General, for the record, would you provide a breakout on this shortfall for 1986, 1987, and 1988 between full-time support and paid drill strength.

ANSWER. The following table shows the drill strength and full-time support (Active Guard/Reserve) programmed and actual end strength and shortfalls for 1986, 1987, and 1988:

ARNG

	DRILL STRENGTH			AGR		
	PROGRAM	ACTUAL	DELTA	PROGRAM	ACTUAL	DELTA
FY86	426,765	422,414	-4,351	23,731	23,780	+49
FY87	427,459	426,621	-838	25,226	25,237	+11
FY88	431,545	429,523	-2,022	25,725	25,659	-66

USAR

	DRILL STRENGTH			AGR		
	PROGRAM	ACTUAL	DELTA	PROGRAM	ACTUAL	DELTA
FY86	285,178	284,490	-688	12,157	12,159	+2
FY87	290,257	288,085	-2,172	12,407	12,414	+7
FY88	292,591	287,604	-4,987	13,329	13,341	+12

2ND INFANTRY DIVISION -- SOUTH KOREA

QUESTION. General Vuono, many Defense analysts have questioned the need to keep the 2nd Division and the Eighth Army in Korea. In testimony before this committee, Admiral Hardesty (sic.), the Command (sic.) in Chief Pacific, stated that the South Koreans were very capable of defending themselves against an attack by North Korea.

General, given the rapid economic growth of South Korea, the modernization of its armed forces, and the air superiority enjoyed by combined U.S. and South Korean forces, why cannot a brigade be reduced from the 2nd Division?

ANSWER. You are correct in pointing out that the Republic of Korea has made significant strides in maturing its defense forces to the point that we are beginning to project that they have a capability to defend themselves against a unilateral North Korean attack. However, U.S. forces in Korea play a much broader role than simply being in place for combat. The 2nd Infantry Division, and the Eighth Army are a visible sign of our commitment to the defense of the ROK. Their presence, and their tremendous combat potential, are essential to deterring a North Korean attack. To reduce our combat forces to less than a division would undercut their deterrent value. We believe that a division is the strategic currency of land power and that at force levels below a division deterrence begins to breakdown and is no longer credible. In addition to their deterrent value, U.S. forces in Korea are the most visible symbol of U.S. support for the South Korean Government's continued movement toward a more democratic society. Any move to reduce U.S. presence could further destabilize an already tense situation.

In addition to its value on the Korean Peninsula, the 2nd Infantry Division plays a vital role in the forward defense strategy of the United States. Whether in a regional conflict in the Pacific, or in global war, we must maintain the ability to defend the vital interests of this Nation as far forward of our territory as possible. Given the increased importance of the Pacific to our economy, and the paucity of land forces already available to USCINCPAC, it is essential we maintain our ready ground combat capabilities in place. The 2nd Infantry Division is our most visible sign of commitment to the Pacific.

QUESTION. General, the 2nd Infantry Division does not have front line equipment. If we replaced the Cobra AH-1 helicopters with Apache AH-64 aircraft, its M-60 tanks with M1A1s, and added MLRS -- would we not be able to retain the same combat capability with smaller U.S. ground troops?

ANSWER. Not really. Although replacement of the AH-1 with the AH-64 would increase the combat capability of the division this would result in only minimal personnel changes, about 13 spaces, which relate to the different number of aircraft between an AH-1 unit and a AH-64 unit. We are putting AH-64s in the 17th Aviation Brigade to support the Eighth U.S. Army. Putting M1A1s in the 2d ID would provide increased capability but is not necessarily a basis for reducing the number of tank units (only two armor battalions are in the division now). An MLRS battalion is already programmed to replace the current MLRS battery at the expense of reducing one infantry battalion from the divison during FY91. This effectively improves combat capability commensurate with the projected threat.

QUESTION. General, the Army maintains 32 thousand troops in South Korea, but only half of these troops are in the combat unit - the 2nd Division. The Army maintains a numbered Army to command this one division.

Why does the Army require so much support and overhead for one combat division?

ANSWER. It is a misnomer to portray the Army forces in Korea that are outside of the 2nd Infantry Division's structure as support and overhead. The majority of these non-divisional forces are signal, engineer, intelligence, military police, supply, maintenance, aviation, transportation, medical, air defense, and artillery units. They are essential to the effectiveness of maneuver units, as they provide the ground commander with a tremendous combat multiplier.

In reality, the 2nd Infantry Division accounts for approximately 44% of our structure in Korea, The combat multiplier units mentioned above account for another 40%. This means that nearly 85% of our structure in Korea is direct combat.

The primary reason this echelon above division structure is in South Korea is to speed the flow of reinforcing combat forces onto the Peninsula in the event of a conflict. By maintaining our in-place essential combat support/ combat service support structure at its current level, we free scarce strategic lift assets to rapidly deploy additional combat forces if a crisis were to arise. Rapid deployment is essential given the shallow nature of the battlefield in Korea.

Army personnel in Korea also man positions in support of the Pacific Unified Command structure, the Combined Forces Command structure, the United Nations Command structure, the National Intelligence community, and the Specified Commands. This portion of our presence (15%) can be identified as support and overhead, but that does not make it any less essential.

The fact that we have chosen to retain a numbered Army (Eighth U.S. Army) reflects our commitment to the Armistice, to the UN, and to our Ally; it does not reflect nor does it imply that we maintain a fully structured Field Army in peacetime.

AH-64 APACHE HELICOPTERS

QUESTION. Mr. Secretary, there have been several negative press reports on the Apache helicopter, noting that it was costly to operate and difficult to maintain. Have you seen these reports and how do you address the charges?

ANSWER. Yes sir, I have seen the reports. There were no new maintenance problems addressed by the media. Corrections for all problems addressed had been previously identified by the Army and along with the prime contractor, McDonnell Douglas Helicopter Company, corrective actions are on-going. We are maintaining an acceptable operating cost.

QUESTION. General Vuono, did the high costs of operating the Apache factor into the decision to cancel the Apache following the FY 1991 procurement?

ANSWER. No. The Apache procurement was truncated after Fiscal Year 1991 strictly for procurement affordability reasons.

QUESTION. General Vuono, what is the priority the Army places on the AH-64 helicopter? If additional funds need to be cut would the Army recommend terminating the Apache before 1991?

ANSWER. The AH-64 is vital to the Army aviation modernization effort. In this important mission area we have already accepted a reduced production rate of 72 to 66 in both FY90 and FY91 with a termination of the Apache buy at 807. This is a reduction of 168 Apaches from the previous buy of 975 (a reduction of 17% in AH-64 inventory). Other reductions have completely eliminated seven attack battalions which were scheduled to be equipped with the Apache. We also need to keep in mind that the termination of the AHIP program in FY89 has significantly impacted our warfighting capability. At this point further reductions in the Apache procurement is not desired, however, the Apache procurement cannot be "fenced" until the magnitude of any future budget cuts are known and analyzed in terms of total force warfighting capability.

QUESTION. Considering that the Defense budget had to be cut, do you believe reducing procurement of Apache helicopters was an appropriate area to make the necessary reductions?

ANSWER. Yes sir. It was necessary to balance Army Aviation Modernization and the total procurement of 807 APACHEs will provide for a robust attack helicopter force.

Impact of the "Strategic Review" on Amended Budget

QUESTION. Secretary Marsh, the Administration is conducting a "Strategic Review" ordered by President Bush. This review is intended to set national security priorities for this new administration, and act as a guide for future negotiations.

Based on the results of this "Strategic Review", will there be an additional Army budget amendment and reprogrammings this year reflecting the implementation of the President's revised priorities?

ANSWER. The Strategic Review is not yet completed. We believe that any programmings or budgeting requirements arising from adopted revisions will be addressed by DOD in revision of the FY 91-94 portion of the FYDP.

QUESTION. Do you have a plan to present changes in the Army Budget that are in order following the completion of the Strategic Review?

ANSWER. We intend to follow the Planning, Programming, and Budgeting System and DOD guidance. We believe that any requirements which emerge from the Strategic Review will be addressed in revisions to the FY91-94 portion of the FYDP, not in the current FY90-91 budget.

MOBILITY - SEALIFT

QUESTION. General Vuono, the recent deployment of troops to Panama underscores the importance of strategic lift and Defense mobility programs. We noted that troops with significant equipment are being sent by ship. During our hearings with the various CINCs, support was given to sealift --yet the Defense budget request for sealift vis-a-vis airlift is insignificant -- the budget requests $3 billion for the C-17 and only $230 million for one cargo ship.

General, if sealift will carry 90 percent of Army's supplies in the event of a European conflict, why is the investment in airlift so high and sealift so low?

ANSWER. The United States is deficient in both airlift and sealift capabilities. The current airlift goal -- far short of the actual requirement -- will not be met until 2004 and our merchant fleet may actually decline by one-third by the year 2000.

Accordingly, the Army strongly supports the development of the C-17 which will improve our intertheater, as well as our intratheater airlift capabilities. The Army also supports a fast sealift shipbuilding program which should be able -- with current and emerging technologies -- to move a corps-sized armored force to Europe in less than a week.

In the mid- to long-term future, it is highly probable that the United States will rely relatively more on reinforcement and less on forward-deployed forces to secure its vital interests abroad. The importance of strategic lift assets will increase, as will the imperative for a national commitment to meeting our shortfalls. This will entail important decisions by our Nation's leadership, as well as concerted action by all of the services, the airlines and merchant marine industries, and our allies worldwide.

It is wrong to contrast air and sealift expenditures for any one year. The answer to our problems will be long-term and will require adequate amounts of both types of lift, as well as prepositioned materiel of various kinds. Clearly, robbing from needed airlift to fund needed sealift would make little sense.

It is similarly important to remember that additional lift is not our only critical defense priority. In the future, the Department of Defense will have to make difficult priority decisions, choosing among critical programs in a timely manner. The United States does not have sufficient resources to cover every critical need to the extent that the strategy requires. Lift is one of many areas where we have accepted significant risk to U.S. ability to defend its vital interests worldwide.

QUESTION. General, in your opinion, where should this Committee invest first to enhance our mobility -- sealift or airlift or prepositioned equipment?

ANSWER. Strategic mobility remains a triad of airlift, sealift and prepositioning. Each satisfies a unique part of the strategic mobility equation; thus making it inappropriate to favor one over the other. The one that currently needs the most attention is sealift. There are currently viable programs to address both airlift and prepositioning. There are not, however, viable programs to address the sealift problem either at the DOD or national level.

ARMY COLLEGE FUND

QUESTION. Secretary Marsh, the Subcommittee understands that the Army is now experiencing, and believes it will continue to experience, problems in recruiting. The Army has made a strong plea to begin, in FY 1989, a test under the Army College Fund for the so-called "2+2+4" program.

Exactly what makes the Army believe that initiating this test program will result in increased recruiting of quality young soldiers?

ANSWER. The declining youth population, higher youth employment, and improved youth wages in the private sector have created a difficult military recruiting environment. The Two-Year Army College Fund incentive primarily attracts the college-bound market to the Army. The inability of the Army to offer the Two-Year Army College Fund for enlistment in non-combat arms military occupational specialties for the past several years has limited penetration of the college-bound two-year enlistees to those willing to enlist only in the combat arms. The female college-bound market has been severely constrained by this limitation. Implementation of the "2+2+4" program will expand penetration of the college-bound market and enhance the fill of Selected Reserve units with qualified and experienced soldiers.

QUESTION. I understand that the Army has also proposed, in the FY 1990 legislative contingency, that payment levels be increased rather dramatically.

Why would it not be better to test the program, adding non-combat arms skills, under the current payment levels rather than increasing incentives before the test is completed?

ANSWER. The present Army College Fund program was implemented in July 1985. There has been no adjustment for inflation. Education costs are up. The rate of inflation of education has eroded the value of the GI Bill and Army College Fund kickers. The face value of the package has diminished by almost one-third since 1985. The number of Army College Fund takers has decreased an average of 31 percent per year from 1986 to 1988 and 5.7 percent per year as a share of all new enlistees.

The Army feels that the proposed increase in Army College Fund incentives is needed soonest to halt the prolonged contract decline. The proposed "2+2+4" test program will restore the market lost when authority to contract non-combat arms with Army College Fund for less than three years is withdrawn. It will not restore Army College Fund purchasing power to 1985 levels nor will it increase the spread between the two, three, and four year Army College Fund options to increase the average recruited term of service. The 20 percent decline is quality contracts written from 1986 to 1988 warrants increasing incentives before completion of the "2+2+4" test.

QUESTIONS SUBMITTED BY SENATOR BYRD

ROLE OF RESERVES AND NATIONAL GUARD

QUESTION: Do you foresee an increased investment in up to date equipment for the Reserves?

ANSWER: Yes, the Reserve Components are integrated into all Army modernization and equipment fielding plans. They are receiving modern equipment as a function of those plans. Modernization of RC units continues based on a fielding strategy of first to fight is first to be modernized.

QUESTION: What steps do you believe are required to bring the capabilities of Reserve forces up to their assigned responsibilities?

ANSWER: Continue to modernize in accordance with modernization plans. In addition, we must work the Military Occupational Specialty Qualification (MOSQ) issue. We now recognize that the limiting factor for the Reserve Components to achieve their assigned responsibilities is training time. Limited training time in the RC is constraining.

REDUCING THE NUMBER OF TROOPS STATIONED IN EUROPE

QUESTION: Reducing the number of U.S. troops stationed in Europe has received considerable attention in the press recently as a way to reduce U.S. defense spending. A variety of estimates for potential cost savings have been mentioned, but there has been no way to determine their accuracy. In reality, there would seem to be no way to prepare such cost estimate accurately without the Army's assistance. In the interest of considering this issue on an informed basis, would your office provide a cost analysis of withdrawing one U.S. armored or mechanized division from Europe, to include the cost of the actual withdrawal and the annual savings (if any) that could be expected from (1) re-stationing the unit in the United States; or (2) deactivating it?

ANSWER: The question correctly notes that cost savings attributable to troop withdrawals from Europe are frequently different which may lead one to question the accuracy of the estimates. This lack of consistency is not necessarily an indication of innaccuracy but is more likely a reflection of the different assumptions that were used when the cost estimates are first formulated. Until assumptions can be consistently framed, cost estimates associated with these issues will continue to vary.

The total one-time cost of the redeployment to CONUS of a 16,500 man Armored Division will fall in the range of $7 to $9 Billion which includes the cost to move personnel and equipment, construct new facilities at one location in CONUS, procure and store POMCUS equipment in Europe and procure additional airlift in order to maintain U.S. commitments to its NATO allies. The construction costs would be reduced if other stationing assumptions are made. Regardless of assumptions, the annual savings associated with stationing the Division in CONUS versus Europe in either case is relatively small which will prevent amortizing the large one-time costs in less than 25 to 50 years as pointed out in a 1987 CBO study on this issue.

If the unit is withdrawn to CONUS and then inactivated, the following costs and savings result. The one-time costs to execute the move and redistribute equipment is about $180 million. The end strength reduction will result in lowered personnel costs saving annually $400 million while inactivating the Division will save another $100 million per year. However, these annual savings will not accrue until the second year following the date of inactivation. Again, assumptions on how the reduction will be executed will greatly impact the estimated annual savings. Depending upon the assumptions used, the calculated annual savings should be between $500 million and $900 million as contained in the 1987 CBO study. The Army believes it would realistically save about half a billion dollars per year.

LHX LIGHT HELICOPTER AND EUROPEAN COOPERATION

QUESTION. The LHX light helicopter program is perhaps the largest single procurement program the Army has undertaken. The possibility of cooperative development with some of our NATO allies (United Kingdom, Netherlands, Italy, and Spain) has been discussed as a means to share the program's costs as well as to improve standardization of NATO equipment. Major General Andreson, LHX program manager, conferred with European military leaders late last year concerning this possibility. Have any further steps been taken in this regard? What are the current attitudes of our potential European partners? Are you at all optimistic that a cooperative helicopter program with our allies would provide a cost savings? What obstacles, if any, do you see in the way of a U.S.-European LHX program?

ANSWER. Yes, steps have been taken in this regard. The Under Secretary of the Army visited Europe in December 1988. His primary purpose was to express U.S. interest in cooperative opportunities and to assess European interest in LHX.

The United Kingdom has expressed positive interest toward LHX. They are currently conducting their version of a cost and operational effectiveness analysis for their cost definition phase for a future light attack helicopter. One of their alternatives is LHX. They have sought and have been provided numerous documents in support of that effort. The European industrial firms of MBB (Germany), Agusta (Italy), Aerospatiale (France), and Westland (UK) have expressed strong interest in LHX participation. The German, French, and Italian Ministries of Defense have not clearly indicated any interest to participate at this time.

The European requirement is for approximately 700 light attack helicopters. This number would increase total LHX procurement to 2800 aircraft with a corresponding reduction in unit cost. While total RDT&E cost would be somewhat greater for a cooperative program, the cost to the U.S. would be lower due to burden sharing.

Potential obstacles include requirements harmonization, technology transfer issues, third country sales policies, funding synchronization among participants, and establishment of a streamlined multilateral government program management structure.

CHEMICAL WEAPONS ARMS CONTROL AND VERIFICATION

QUESTION. The proliferation of chemical weapons appears to be running apace, even while negotiations for a complete and total ban on their production and stockpiling continue in Geneva. Perhaps the most intractable problem in controlling the spread of chemical weapons or enforcing their prohibition is that of adequate detection and verification of production. Should the negotiations in Geneva to ban chemical weapons be successful, an adequate verification regime will be critical. The Army is the lead agency for the U.S. chemical warfare program. What research efforts are being made to improve our verification capabilities in this area?

ANSWER. The Army is the lead agency for the U.S. Chemical Warfare and Chemical/Biological Defense Program. Army expertise in CB Defense has been exploited to support technical operation of rolling text (C/D-500 Geneva), the National Trial Inspection and verification modalities. For example, technologies in detection and warning systems being developed for force protections are applicable to this requirement.

The Defense Nuclear Agency (DNA), designated by the Deputy Secretary of Defense as the DOD's executive agent to coordinate all treaty verification RDT&E in support of on site inspections, is responsible for implementing and managing technology development. In FY90, DNA has requested $19 million for all verification technology programs with $100 thousand dedicated to the Chemical Treaty Program.

SPECIAL FORCES AND THE WAR ON DRUGS

QUESTION. As the United States intensifies its efforts to stem the flow of drugs into this country, Drug Enforcement Administration agents are in the forests of South America participating in "search and destroy" patrols against clandestine drug production facilities and engaging in firefights with drug cartel "irregulars." It would appear that this type of "guerrilla war" is precisely the type of low-intensity conflict for which the U.S. Army Special Forces is trained and prepared. Do you see the U.S. Army Special Forces as a potentially effective weapon against overseas drug traffickers? What caveats (if any) would you offer with regard to their use?

ANSWER. U.S. Army Special Forces (SF) can be an effective instrument against overseas drug trafficking, when employed in response to host nations' request as trainers and advisors to host country forces. SF is a force multiplier, and is most effectively used in a training and advisory role. Direct US SF involvement is only advisable when approved by the NCA upon invitation of the host nation. SF could also conduct unilateral direct action (DA) and special reconnaissance (SR) missions, but only if there is a clear U.S. military chain of command and regional CINC involvement. SF should only be used in these roles when target criticality and timeliness dictate the need for such operations.

One of the primary missions of Special Forces (SF) is Foreign Internal Defense (FID). FID operations are designed to promote national and regional stability and to combat insurgency and lawlessness.

SF provide task-organized mobile training teams with regional orientation and host nation language skills to organize, train, advise and assist host nation military and paramilitary forces.

Specific training sub-missions of FID which apply to counter-drug operations include:

- Operations against insurgent (drug) base areas to separate the insurgent from his support and to destroy his facilities.
- Operations against interior infiltration routes to deny or limit insurgent movement.
- Border operations to provide surveillance and control over possible infiltration routes.

Previous counter-narcotics operations have shown that military trainers must have expertise in intelligence, operations planning, weapons, security, small unit tactics (to include air assault tactics), demolitions, logistics, secure long-range communications, and medical skills. Training does not include those subjects prohibited by law. Trainers should also have expertise in jungle, riverine and mountain operations.

The threat in the area and security concerns dictate that military trainers should not be deployed to separate areas (areas not capable of timely mutual support by ground transportation) in groups smaller than 12-15 personnel, with the appropriate command and control element. If multiple training sites are established, each site should have a 12-15 man team, with a centrally located or co-located command and control element providing overall coordination. Command and control element should have as a minimum a commander, operations and intelligence specialist, and a communications specialist.

U.S. military trainers should be properly equipped for the area, and sufficiently armed for self-defense.

Clear, concise rules of engagement must be established prior to deployment.

COMMAND AND CONTROL OF THE ARMY RESERVE

QUESTION. I understand that an Army panel is studying the question of command and control of the Army Reserve and that its report is due sometime late this summer. While that report will constitute the official Army response on the subject, I'd like you to give this Committee your personal view on this issue. Are there serious problems with the way the Army Reserve is commanded, managed, supported? Are there ways the current system could be improved and be made more efficient and effective? Do you think that such changes could improve the Reserve's mobilization readiness?

ANSWER. The panel that we have convened is specifically chartered to address the very questions that you have raised. The panel has been working now for nearly two months. Their report and recommendations will address a wide variety of factors and perceived problems. I believe that it would be premature for me to provide personal thoughts at this time which might later be perceived as the Army position or as potentially counter to the recommendations of the panel.

QUESTIONS SUBMITTED BY SENATOR LEAHY

GUARD ARMOR MODERNIZATION

QUESTION. Under the current Army proposal to modernize the National Guard armor units, the Guard is scheduled to receive approximately 119 displaced M1s in FY90 and 109 in FY91. I understand the numbers improve slightly in later years but not by much. Is this correct?

ANSWER. The National Guard (ARNG) is scheduled to receive 152 M1 tanks in FY90 and 132 M1 tanks in FY91. Between FY92 and FY95, the ARNG is scheduled to receive an average of 228 M1 tanks per year. Additionally, the ARNG will receive 60 M1A1 tanks in FY91, 240 M1A1 tanks in FY92, and 120 M1A1 tanks in FY93.

QUESTION. The Army is scheduled to receive 60 M1s this year. Who will receive the displaced M1s the Guard does not receive? Please provide a breakdown of who is going to be equipped with the M1s that are not sent to Guard units, including how many will be sent to prepositioned war reserves.

ANSWER. The Army will receive 734 M1A1 Abrams tanks in FY89. This will displace 318 M1 tanks and 416 M60 series tanks from Europe. The 318 displaced M1 tanks will be distributed as follows:

National Guard units - 181
Active Component units - 66
Prepositioned War Reserve - 71

QUESTION. Has the Army decided to equip war reserves at a higher level than the Guard? If so, what is the justification for this decision?

ANSWER. A principle of the Army's overall strategy for modernization is to modernize, in priority, those forces who will be first to fight. As such, the Army's tank modernization strategy is based on concurrent modernization of forward deployed forces (including war reserves) and CONUS based forces. As the M1A1 tank is fielded to Europe, displaced M1 tanks will be used for modernization of both CONUS forces and war reserves. A minimum essential number of M1 tanks is required for war reserves to be compatible with the tanks which are fielded to Army units in Europe. In FY90, 318 M1 tanks will be displaced by M1A1 fielding. Of this number, 181 will be distributed to National Guard units, 66 to CONUS AC units, and 71 to war reserves.

QUESTIONS SUBMITTED BY SENATOR DeCONCINI

APACHE (AH-64)

QUESTION. General Vuono, you visited Fort Hood on Monday to assess the terrible damage done by Saturday's storm. According to General Pihl's testimony yesterday, the damage may be upwards of $1 billion and will result in a review of your Army Aviation Plan. I also understand a significant number of Apache helicopters were involved. There is now some discussion of adding additional Apache aircraft to the budget.

You currently have a 4-year multi-year proposal in AVSCOM that has already been approved the Congress. Doesn't it make sense to take advantage of it? This appears to be the most cost-effective way to replace the damaged aircraft while maintaining the production base for a few more years.

ANSWER. The current assessment at Fort Hood is that of the 152 APACHE's assigned, 111 exhibited some type of storm damage. There is an extensive cost/damage assessment being performed at this time. Of the 111 identified damaged APACHE's, 45 have tentatively been assessed for depot level maintenance. We expect that because of the nature of the damage there could be airframes which will be uneconomically repairable. Our direction now is to determine disposition of any washed out aircraft as use for repair parts, as stationary trainers, or suitability for test vehicle. Our procurement objective for the APACHE is 807. We expect the number of uneconomically repairable aircraft to be low. Therefore, there is no reason to increase the procurement quantities for APACHE's in the Fiscal Year 1990/1991 budget. Given these facts we have determined that a multiyear procurement for additional helicopters is not necessary.

QUESTION. Last year Congress approved the Army's 4-year multi-year proposal (MYP) at 60 aircraft per year and appropriated funds to support it. The revised budget does not provide for the MYP and cancels the AH-64 after FY 91.

Why was there this change in strategy?

Won't our troops in Europe increasingly rely on conventional weapons as a result of the cuts resulting from the INF Treaty and future strategic arms talks?

ANSWER: The Army had to make some tough choices to stay within the President's budget guidelines. AH-64 reduction supports continued development of LHX. The current number of AH-64's being procured (807) supports 40 of the 47 resourceable battalions. This is an acceptable near-term risk that will be offset with the fielding of LHX armed reconnaissance helicopters beginning in FY 97. The LHX will complement the AH-64 Apaches, increasing lethality and survivability while improving the overall warfighting capability. Increasing the number of Apaches and not fielding the LHX would have less warfighting capability because of reduced survivability. Reduction of AH-64's equates to one battalion reduction in Europe but is offset with the fielding of LHX to Europe in FY00. The loss of one battalion is acceptable. Must not mortgage the future for the present or allow the US to lose its technological lead in attack helicopters.

APACHE (AH-64) AND LHX

QUESTION. Yesterday, General Pihl said that with the Apache, "we (the Army) have a winner." Is it not true that the Army is very pleased with the performance of the Apache?

While as a result of the budget revisions and choices which the Army was forced to make, the Army chose to increase funding for the LHX. When is the LHX scheduled to begin production?

Especially in light of the disaster at Fort Hood, with what will the Army meet its attack helicopter needs in the years between the cancellation of the AH-64 and the bringing on line of the LHX?

ANSWER. To answer your first question, yes the Army is pleased with the performance of the APACHE. Continuing on sir, we did not increase the funding for the LHX program. Rather, what we did was protect the original program and decremented other programs to maintain schedule for our LHX program. We are aware of the fielding gap created between the termination of the APACHE program and the fielding of LHX. Considering the longer term threat, we firmly believe it more prudent to continue to develop the more survivable LHX. The Army plans to continue to use the OH-58 and the AH-1 to accomplish the light scout/attack mission. These aircraft fill the gap between the APACHE production closeout and LHX fielding.

AHIP

QUESTION. Secretary Marsh, reportedly, field commanders have been particularly pleased with the performance of the AHIP. They say that especially in Europe, that the AHIP fills a critical gap in our warfighting capability. The AHIP is currently in production at cost-efficient levels.

Can you state how well the AHIP performs in the field environment?

ANSWER. AHIP field performance to date is outstanding. In addition to AHIP performing superbly at NTC and in Europe, the aircraft has also achieved high marks under actual combat conditions in the Persian Gulf and is still operating off USN ships there. Our Field Commanders continually report that the AHIP provides a new dimension to the battlefield both as a day/night and adverse weather reconnaissance aircraft and as a survivable platform to adjust conventional and precision munitions. All AHIP'S deployed to the Persian Gulf are achieving the upmost in safety and maintenance standards with a cumulative mission capable rate well above the DA standard while flying in excess of 5,000 hours.

At the National Training Center, the AHIP continually gives our commanders a significant new battlefield multiplier. As a reconnaissance aircraft, it identified threat formations at ranges exceeding 15 kilometers and enjoyed considerable success with target acquisition and remote designation of various "smart" munitions.

QUESTION. Is it not true that you wrote to Secretary Cheney and urged him to reconsider his decision to cancel the AHIP?

ANSWER. Yes. On 12 April 1989.

QUESTION. What was your rationale for supporting the AHIP?

ANSWER. The most significant Army aviation deficiency is the limited ability of our forces to see the battlefield at day/night and during adverse weather. This problem is particularly acute in our reconnaissance/cavalry and attack units equipped with the OH-58A/C and AH-1 aircraft. The AHIP, particularly Armed AHIP, is key to bridging the eight to ten year gap in seeing the battlefield until LHX is fielded in quantity.

Almost equally important is the 8-10 year head start the Armed AHIP can give in modernizing the aviation force. Eight armed AHIP's can replace 10 AH-1 Cobras and OH-58A helicopters. This frees up these aircraft quickly, and by moving AH-1 Cobras and OH-58A's into reserve components quicker, the Army can accelerate reserve modernization and retirement of older aircraft.

QUESTION. If there were money available in the budget, would the Army want the AHIP?

ANSWER. Yes.

TOW MISSILE

QUESTION. Secretary Marsh, is the Army dissatisfied with the quality, performance, or delivery of the TOW missiles presently being delivered by the Hughes Corporation in Tucson? Would you provide me with the current status of the ongoing second or dual source discussions in which the Army is engaged with Hughes?

ANSWER. On the contrary, the Army is very satisfied with the TOW missiles procured from Hughes Aircraft. As of 23 May 1989, Production Accepting Testing (PAT) for the TOW 2A missile has resulted in the acceptance of all 39 lots. Each lot represents approximately one thousand missiles, some of which contained TOW 2 missiles for Foreign Military Sales. Of the 39 lots, only two of 166 missiles flight tested have experienced failures. This equals a 99 percent success rate. No TOW 2A missile lots produced by Hughes have ever been rejected due to PAT failures. Since 1987, Hughes has maintained a delivery schedule one month ahead of contract requirement except when late delivery of Government Furnished Equipment delayed missile production.

Second source proposals were received on 26 April 1989; we expect to award the contract on/about 21 June 1989.

QUESTIONS SUBMITTED BY SENATOR BUMPERS

TANK PRODUCTION

QUESTION. If Congress cut all funding for tanks, how long would it be before we would see a change at the Lima, Ohio, or Warren, Michigan tank plants? Is it possible that the Soviets are cutting back on funding for tank and other military production but that it takes a while before we would see physical evidence of this? What additional evidence should we be seeking from the Soviets (or from our intelligence capabilities) to prove whether or not they are beginning to make major cutbacks in production?

ANSWER. If all funding were cut from the FY90 President's Budget, tank production as a result of previous Congressional appropriation would continue through April 1991. At that time, no more tanks would be produced from the two government-owned/contractor-operated tank plants. It is possible that the Soviets could cut back on funding for tanks and other military equipment and that it would be some time before the physical results are apparent. The additional evidence needed to confirm whether they are beginning to make major cutbacks in production can be generated through on-site verification at each production facility

U.S. ARMY RESERVE AND ARMY NATIONAL GUARD

QUESTION. Could you expand on your statement that "We are very close to the limit of reliance that we can safely place on the U.S. Army Reserve and Army National Guard" (p.6)? Many believe that this part of our force structure will have to be beefed up in the years to come. Are you suggesting that there would be serious national security repercussions in so doing?

ANSWER. Placing significant increased reliance on the Reserve Components (RC) could result in significant additional risk to our national security unless there is a radical shift in the strategic environment, i.e., a huge drawdown of forces by the Soviets and a lessening of threats in the Second and Third Worlds. Today we have the right balance of active and reserve forces to execute the strategy with more than moderate risk. We have accepted this risk based on national priorities and an assessment of the probability of war through the midterm period (next eight to ten years).

Our active forces provide us with credible deterrence (forward deployed) and contingency forces as well as a relatively rapid reinforcement capability worldwide. Our RC forces provide us with the sustaining power for continuing the fight. Shifting AC deterrent, contingency, or rapid reinforcement missions to the RC is infeasible. RC units cannot mobilize and deploy in time to perform such missions. Additionally, because of training time constraints, RC units cannot achieve the same level of collective and individual proficiency as their AC counterparts. This limits the type mission and roles these units can play.

One-half the Army is already in the Reserve Components, including 42% of our combat units, 58% of our combat support units, and 70% of our combat service support units - a carefully developed proportion that structures the Army for deterrence. Some type units reside almost exclusively in the Reserve Components. The Reserve Components have grown by 40% over the last 10 years. The demographics suggest that significant additional growth will be very difficult.

But we cannot put significant amounts of our force into the RC unless there is a significant change in warning time or correlation of forces vis-a-vis the Soviets/Warsaw Pact.

MULTIPLE LAUNCH ROCKET SYSTEM

QUESTION. In his statement to this Committee, Secretary of the Army Marsh calls the MLRS "The best equipment of its kind anywhere in the world." I completely agree. But if this is true, shouldn't this "best of its kind anywhere in the world" weapon be funded at more than a level that cuts the rocket production by 67%? Isn't it true that the Army requested more rockets but this got cut in the Office of the Secretary of Defense?

ANSWER. For the FY90 budget submission, the Army requested funding to procure 24,000 MLRS rockets. The number of requested rockets was based upon Army priorities in the constrained budget. The previous year the Army procured 48,000 rockets. In their staffing of the FY90 Budget submission, the Office of the Secretary of Defense supported the Army's requested MLRS procurement of 24,000 rockets.

LIFT CAPABILITIES

QUESTION. You rightly express your concern over our lift capabilities. Which do you consider more serious, our sealift or airlift shortfall? Given that about 90 percent of our materiel in wartime will go to Europe by ship and the decline in our Merchant Marine, isn't the sealift shortfall very serious?

ANSWER. In the event of a conventional war, the Army considers the shortage in strategic lift capability one of the most significant areas of vulnerability. As such, we place equal importance on maintaining adequate airlift and sealift so that we have the flexibility to meet our global commitments.

Full funding of the C-17 program has been and continues to be a top priority of the Army. We are extremely happy that this vital program is funded at established levels. Support for research and development in the area of ultra fast sealift is urgently needed. This promising new technology could provide the flexibility we need to deploy rapidly, in a timely manner, heavy ground forces around the globe.

As the U.S. Merchant Marine and the corresponding strategic sealift capability continues to decline, the shortfall is indeed very serious. Economic factors in the market place are causing this decline in the number of militarily useful ships in our merchant Marine. We project that this decline will continue and, despite some improvements in strategic mobility such as the fast sealift ship, container ship modification program and the Ready Reserve Force Fleet, our strategic lift shortfall will continue to persist unless this decline is arrested. We wholeheartedly support the commitment to a National Sealift Policy to stem the decline in our Merchant Marine.

QUESTIONS S[illegible]MITTED BY SENATOR LAUTENBERG

COMMERCIAL PROCUREMENT

QUESTION. What percent of your procurements are made accepting adequate price competition as an exception under TINA?

What percent of procurements are made accepting catalogue items involving substantial sales to the general public as an exception under TINA?

ANSWER. $8.2 billion (29.2%) of Army procurements were made pursuant to price competition. This sum represents awards made to the offeror(s) submitting the lowest evaluated prices.

Notwithstanding this data reported a "price competition" in the Federal Procurement Data System, there is no current reporting system that will reveal whether or not contracting officers asked for, and received (certified) cost or pricing data on any of these procurements. For example, supplemental agreements to basic contracts awarded as a result of "price competition" share the "price competition" reporting status of the basic award.

QUESTION. Are you fulfilling CICA and using competition as the principal vehicle for procurement?

ANSWER. The Army's competition performance has been as follows:

Fiscal Year	Percent of Dollars	Percent of Actions
1986	53.1%	82%
1987	58.8%	88%
1988	61.6%	93%

I believe the figures speak for themselves. Prior to CICA the Army was awarding below 50% of its dollars using competition methods. The first full fiscal year since CICA (implemented April 1985) the number of dollars obligated using competitive procedures exceeded 50%. The Army goal for 1989 is 61% of dollars awarded under competitive methods. We have every confidence that we will accomplish that goal.

QUESTION. Is the presence of adequate price competition providing the opportunity for regulatory relief?

ANSWER. The Army has emphasized the need for contracting officers and source selection personnel to scrutinize closely the amounts and kinds of pricing data required for contractor submittal. Also, the depth of analysis that was required in the past can be waived when adequate price competition exists. Audits, especially in-depth review of certain pricing elements, can certainly be limited to those elements which will be most beneficial in negotiations and discussions. The auditors have agreed to limit reviews to those elements designated by the requirer, thus saving both time and effort for government and contractor personnel.

QUESTION. The DOD Report required by law said you are complying with the requirement to buy commercial. What percent of total procurements [has the Army] done commercially?

ANSWER. Our data system cannot identify percent of total procurements done commercially; however, of the 517 systems reported in the Army Acquisition Management Milestone System, 188 systems or 36% are reported using NDI acquisition strategy.

QUESTION. What training programs exist to train contract officers and those who draw military specifications in how to buy commercial products and how commercial companies do business in the market place?

ANSWER. The Army trains on how to buy commercial items as part of describing the Nondevelopmental Item (NDI) acquisition strategy as a preferred method to satisfy materiel needs. NDI is defined in Army policy as systems available from a variety of sources requiring little or no follow-on effort to meet Army requirements. NDI includes commercial "off the shelf" items, materiel developed and in use by other U.S. military services or government agencies, and materiel developed and in use by other Allies. The Army has multiple training programs addressing NDI acquisition open to all Army personnel; the Army Logistics Management Center has seven courses addressing NDI, which train an average of 1800 people per year, and the Army Management Engineering College has five courses addressing NDI, which train approximately 550 people per year. Additionally, the Army actively participates in several annual Army-Industry forums, such as the Atlanta series of conferences, specifically conducted to surface and address issues of mutual concern for the Army and companies in the commercial marketplace.

SMALL BUSINESS PARTICIPATION

QUESTION. What is the degree to which small business participates in defense procurement? What are the dollar amounts, and what is the percentage?

ANSWER. In Fiscal Year 1988, Department of Defense prime contract awards to small business equaled $25.229 billion or 19.3% of the total $130.815 billion in prime contracts awarded to U.S. business firms. Department of the Army awarded $7.441 billion to small business or 25.2% of total Department of Army prime contract awards to U.S. business firms.

COMMERCIAL PROCUREMENT

QUESTION. How can you buy more commercial products and buy more commercially?

How much savings do you think is possible from doing the maximum in this area?

ANSWER. The Army policy already emphasizes maximum use of nondevelopmental item acquisition. Army policy requires that NDI always be considered as an alternative to satisfy a materiel requirement; once the need for a materiel solution has been determined, Army policy states that the basic order of precedence for acquisition alternatives to use in satisfying that need is:

improvement/reconfiguration of existing materiel, then use of NDI and lastly, a new development. Army policy also emphasizes that trade-off analyses must be accomplished on all materiel requirements so NDI can be used whenever possible. Additionally, Army has detailed procedures in regulatory guidance for surveying U.S. and foreign commercial markets to determine availability of products to satisfy needs.

It is difficult to determine cost savings; NDI is not always a standalone end item, but is often found as one or more components of a larger system. In addition, it is impossible to quantify savings attributable to quicker fielding or use of more current technology resulting from using an NDI solution to Army requirements. Army policy is to gain the benefits of commercial products, in terms of reduced cost, quicker fielding, and newer technology, wherever it makes sense to do so. To that end we specifically require consideration of nondevelopmental alternatives in preference to initiation of new developments, even going so far as to consider reducing or eliminating specific requirements, wherever practical and reasonable, so that commercial items may be considered.

QUESTION. Is the government doing extensive market research to find out what is available commercially?

What is [the Army] DOD doing to reduce commercial product regulation?

QUESTION. What is [the Army] DOD doing to allow the purchase of commercial products with minor modifications?

ANSWER. The Army specifically recognizes and identifies "Nondevelopmental Items Adaptation" as one category of the NDI acquisition strategy. Army policy guidance specifically defines this category as off-the-shelf items adapted for use in an environment different than that for which designed and acknowledges that it may require some modification of hardware or operational software. As one category of the overall NDI acquisition strategy alternative, Army policy requires it always to be considered before initiating a new development program to satisfy a need.

QUESTION. What is [the Army] DOD doing to allow the continued buying of an older commercial product whose manufacturer has been discontinued in the commercial arena?

ANSWER. There is no policy prohibiting DOD to continue buying older commercial products as long as requirements for that item exist. However, in such cases the cost for the item would be higher. Under such circumstances, efforts would be made to find an alternative commercial source(s) through a market survey or changing the specification to buy the newer commercial item.

QUESTION. How does the Army feel about a commercial products advocate?

ANSWER. The utilization of certain commercial products in military systems or the review of militarized equipment for possible usage of commercial products is certainly desirable and would probably enhance competition for certain classes of supplies and equipment. To designate such a separate advocate may not be in best interest of the Government. Utilization of commercial products should be an initiative such as nondevelopmental items. The initiative would need to be applied from design concept through the life cycle of the system. Program Executive Officers and Project Managers would need to address this principle in planning and execution phases. As there is a network of advocates for competition overseeing life cycle competition, it appears that the existing structure could be tasked to provide guidance and oversight in this arena. Perhaps a DOD oversight authority should be considered to assure initiatives are implemented by the services in a similar or consistent manner.

QUESTION. What means does a person writing the product requirements or the contracting officer have to ascertain commercial alternatives to a military spec? Any market research? What resources are available to determine what's available?

ANSWER. Army laboratories and Research and Development Centers conduct market surveillance in support of their functional missions. The purpose of market surveillance is to gather sufficient data to identify technical capabilities and industrial capacity to meet potential Army technical capabilities and industrial capacity to meet potential Army requirements. The focus of market surveillance is on particular marketplace segments, e.g., electronics, lasers, vehicles. Additionally, Army policy guidance outlines procedures and sources to use in conducting an analysis of the market based on a specific requirement. Sources to use, in addition to market surveillance data bases, are provided and include unsolicited proposals, independent research and development reports and presentations, and trade shows and journals.

QUESTION. Would it be helpful to you if, when you did certify that an item was being procured through full and open competition, that you don't need to require cost and pricing data?

ANSWER. When items are procured through full and open competition and cost/price is a substantial element of basis of award, cost or pricing data is not required.

QUESTION. The Army is the only service that has been able to keep track of how much commercial purchasing it does. How have you been able to determine that statistic? How much time did it take to come up with this method? How much would you estimate it costs to keep track of this per year? Why did you decide to measure this statistic, and have you found it useful? In what way?

ANSWER. The Army already required that program managers report key milestone events for systems being acquired. One of the reporting elements is the system's acquisition strategy, e.g., product improvement, NDI, developmental. This information is entered into a central data base, making it possible to estimate the number of NDI programs underway. The data base has existed for some time and the addition of descriptors addressing NDI programs was able to be included at minimal additional cost. This data is useful from two different perspectives: first as a management indicator to help measure the effectiveness of the Army's policies in increasing the use of commercial type items, and secondly in being able to respond to external inquiries as to the extent of the Army's utilization of this procurement alternative.

COST AND PRICING

QUESTION. Cost and pricing data is one of the deterrents most frequently cited by companies to doing business with the government. What revisions, [if any, has the Army] DOD made to reasonably define commercial products for the purpose of determining if cost or pricing data must be furnished? What measures have been taken to ensure that contracting officers discontinue requesting cost or pricing data for commercial products where it is inappropriate?

ANSWER. DOD recognizes that unnecessarily requiring cost or pricing data is not in the best interests of the government because it leads to increased proposal preparation costs, extends procurement lead time, wastés both government and contractor resources and discourages competition. Recently the DOD Federal Acquisition Supplement was revised to provide coverage that contracting officers should rarely require certified cost or pricing data when adequate price competition is anticipated.

QUESTION. It is alleged that cost or pricing data are frequently required when adequate price competition exists. In light of the passage and implementation of the Competition in Contracting Act (CICA) in 1984, DOD reports that competition exists in the vast majority of procurement transactions. As such, what is now the official [Army] DOD position regarding the definition of adequate price competition? What affirmative measures has [the Army] DOD taken to ensure that contracting officers do not request cost and pricing data from offerors when adequate competition exists?

ANSWER. The definition of adequate price competition and clarification that cost and pricing data are rarely required when adequate price competition is expected was recently addressed by revisions to the Defense Federal Acquisition Regulation Supplement.

QUESTION. Commercial companies feel that the FAR regulations do not recognize their special problems associated with the furnishing of cost of pricing data. What has [the Army] DOD done to ensure that unreasonable burdens are not placed on commercial companies and that their legitimate concerns are addressed?

ANSWER. DOD is aware of the problems associated with preparing cost and pricing data for commercial firms. The changes recently incorporated into the Defense Federal Acquisition Regulation Supplement on refining the definition of adequate price competition should assist in reducing unnecessary requirements for cost or pricing data by contracting officers. Further, DOD is currently working on a proposed revision to the Federal Acquisition Regulation that will ensure that only a minimum of pricing data will be obtained for commercial products.

QUESTION. What affirmative actions has [the Army] DOD taken to ensure that technical specifications are not used unnecessarily and that preference is given to stating the requirements in terms of functions to be performed, performance required, or essential physical characteristics rather than detailed military specifications?

ANSWER. The Army Standardization Improvement Group (HQ AMC) is finalizing an action plan for implementation of DOD's initiative to enhance Defense Standardization. The group will meet with representatives from all AMC activities on 13 and 14 Jun 89 to finalize the plan and then conduct a survey with the top 100 Army contractors for the purpose of identifying unrealistic, nonessential and/or outdated specifications and standards. Under the Army's streamlined Acquisition Program, preference is given to tailoring the development approaches as to requirements, functional strategies and business practices. The Army uses draft Request for Proposals to obtain Industry's comments, use of proof-of-principle approach in the concept exploration and demonstrated validation efforts to determine to what extent material changes or non-developed items can be used, its Independent Research & Development Program with Industry on development of products/product improvements that can be adopted to meet Army requirements and the use of market surveys to find available products/design concepts that satisfy Army requirements.

QUESTION. What has [the Army] DOD done to streamline and reduce the oversight on inspection and audit requirements for commercial companies when buying commercial products?

ANSWER. DOD is in the process of making proposed changes to FAR Part 46, Quality Assurance whereby greater reliance is placed on the contractor for testing and inspection of commercial or off-the-shelf supplies under fixed price contracts that do not exceed the small purchase limit without regard to the complexity or intended application of the supplies. As for audit requirements, audit oversight is automatically reduced by the FAR and DFAR regulations. The contractor only has to submit a Standard Form 1412, "Claim for Exemption from Submission of Certified Cost of Pricing Data." This form only requires the contractor to show commercial sales of comparable quantities and price. An audit is usually not performed, however, if performed, only sales are reviewed for similar quantities and price.

SOURCE SELECTIONS

QUESTION. Has [the Army] DOD taken any measures to give credit in source selections to commercial products and non-developmental items where they can prove satisfactory commercial performance in satisfying a military requirement?

ANSWER. The AMC Pamphlet 715-3, The Source Selection Process, stresses the use of acquisition streamlining techniques in the source selection process. These techniques such as the decision to go with NDI or commercial items would be made during the preparation of the solicitation and not during the evaluation phase. Selection of the contractor with the "best value" is where credit could possibly be given for commercial or NDI, if they met the "best value" criteria.

QUESTION. What flexibility is allowed in source selection to consider commercial products and non-development alternatives in lieu of restricting competition to strict military specifications and requirements?

ANSWER. Army Regulation (AR) 70-1, AMC P 715-3 and DODD 5000.43 emphasize the policy "for acquisition streamlining to ensure that only cost-effective requirements are cited in defense

solicitations and contracts." As in question 21, these streamlining measures such as NDI and commercialization would be fully considered before the preparation of the solicitation. AR 70-1 prescribes the steps needed for approval to go NDI.

MARKET RESEARCH

QUESTION. Increased investment up front in the acquisition process to do comprehensive market research on non-developmental items and commercial products can result in substantial savings. What has the Army done to encourage this type of effort? Has the Army established formal training for the acquisition community to teach them how to perform market research and reinforce the preference for commercial and non-developmental items?

ANSWER. The Army is the lead service in promoting and acquiring non-developmental items (NDI). We have a series of regulations that address alternative options in acquiring materiel and cover diverse subject matter such as testing, logistics, personnel, and other disciplines.

Results of these efforts are reflected in the fact that over 30% of combat and tactical acquisitions are NDI and our Information Systems Command and Army Medical Department acquire NDI at approximately 95% and 98% respectively.

We train our acquisition community on NDI preference and market research as part of the overall acquisition process. The Army Logistics Management College offers several courses such as the Materiel Acquisition Management, Specification Management, and Integrated Logistics Support basic and advanced courses. At the Army Management Engineering College, students attending Systems Engineering, Configuration Management, Principles of Value Engineering, and other classes are exposed to NDI. In addition, we contract several other courses on streamlining that address NDI acquisition for not only middle and upper managers, but also executive level classes for our general officers and Senior Executive personnel.

COMMERCIAL PRODUCTS

QUESTION. When [the Army] DOD buys a commercial product, what has its experience been with commercial suppliers below the prime contractor level with regard to the acceptance of unique government terms and conditions?

ANSWER. Usually we have no problems; however, we have experienced a few problems at the subcontract level on commercial items. In virtually all cases it has been a refusal to provide adequate cost data. This usually happens when the Government buy is in excess of any one sale to commercial customers and Government personnel cannot establish the reasonableness of price for the larger quantity without cost data.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

CLOSE AIR SUPPORT

QUESTION: What is the status of the Army-Air Force project to develop a follow-on to the A-10 for close air support? I understand that the "stretched" A-7 has run into snags, that the A-10 upgrade packages are still circulating among contractors, and that A-16 testing is taking place. Can you comment on each of these programs.

ANSWER: There is no joint Army-Air Force project to develop a follow-on to the A-10. The Air Force is responsible for the close air support (CAS) mission, and with help from the Army, refines the mission requirements. However, the development and procurement of a follow-on to the A-10 would be an Air Force program. The Air Force is concerned about the continued mission effectiveness of the A-10 and has been analyzing likely replacements for the A-10 in the CAS mission. However, to date there is no program to develop, nor procure a follow-on for the A-10.

During the formulation of the Amended President's Budget, enhancements for 225 A-10s were funded to improve mission effectiveness in CAS, and 146 Block 30 F-16s were funded to improve mission effectiveness in both the CAS and Battlefield Air Interdiction (BAI) mission areas. These efforts will have a positive affect on the Air Force's ability to support the Army on the battlefield. However, they constitute improvements in current capability only and do not represent a solution for a follow-on to the A-10.

The A-7 "stretched" program, more commonly called the A-7F, is funded throughout the prototype flight evaluation phase. The prototypes have not flown yet, so it is difficult to make a firm production decision. Once the prototypes fly, validate performance requirements, and fiscal realities are assessed, the Air Force will consider recommending a procurement decision.

As mentioned, enhancements have been funded for a limited number of A-10s (225). This program is in the baseline definition phase, and no formal documentation has been provided to contractors, although several have been involved in discussions about the type of modifications to be done. Once the baseline for this program is fully defined and program direction issued, contractor involvement will be more formal.

The Tactical Air Command conducted a series of demonstrations with specially modified F-16s to determine their capability in the CAS mission. These tests were conducted in FY88 and demonstrated that the proposed A-16 could provide the necessary support required by the Army for CAS. Continuing improvements in production and modified F-16s will likely encompass enhancements in the CAS and BAI missions. All F-16s are capable of providing CAS when needed, although it may not be the aircraft's primary mission. A new production A-16 would be missionized specifically for CAS and BAI, and the pilots primarily trained for these demanding missions. However, there is currently no program to develop or procure a missionized A-16.

TANK KILLING WEAPONS

QUESTION. Besides M-1A1s equipped with a 120mm gun firing kinetic energy rounds using depleted uranium long rod penetrators, what systems does the Army, or even NATO have that can kill the newest Soviet tanks?
ANSWER.

QUESTIONS SUBMITTED BY SENATOR SPECTER

IMPROVED RECOVERY VEHICLE

QUESTION. Since the Department of Defense canceled the program and the Army has no plans to build a new recovery vehicle into the year 2000, how does the Army plan to safely recover the heavier 70-ton M1A1 tank?

ANSWER. The Army will continue to execute the recovery mission with the current safety restrictions in force. Using a M88A1 as a towing vehicle, and another M88A1 or M1A1 as a trailer or braking vehicle, is a safe way to recover tanks as long as procedures are explicitly followed.

QUESTION. How can the Army cancel the Improved Recovery Vehicle (IRV) Program in light of the fact that the major Army troop commanders have stated than an IRV is required to safely perform recovery operations in both peacetime and in combat?

ANSWER. During the recent budget revision, the Army had to answer several tough questions involving the future of many of its programs. The Army had to examine those programs that were at the margin with respect to mission essentiality, cost effectiveness, and technical feasibility. During the budget adjustment process, the Army had to reduce or terminate programs which met a service requirement, but which could not be afforded at this time. The IRV is one of those systems where continued expenditure of scarce resources could not be justified in lieu of other alternatives.

The Army has a requirement for a Recovery Vehicle (RV). It is not included in the Heavy Force Modernization Program in the current budget request but is being retained in design along with the other system requirements that were unaffordable in light of funding constraints. Criticality of need, maturity of technology, and affordability will determine which of the systems retained in design will be developed and fielded first. The six variants in HFM Package 1 were selected on operational need, battlefield contribution, maturity of technology, and affordability.

M577 Mechanical Time Fuze

QUESTION: The FY 88 Defense Appropriations Report stated the Committee's intent that the Army is expected to maintain two M577 mechanical time fuze producers during the transition period to the replacement electronic fuze.

Why didn't the Army respect that intent in the FY 89 procurement of the M577 fuzes? Why did the Army make a 100% award to one contractor when at that time it had not even concluded its first solicitation of a sole source award for a limited number of M762 electronic fuzes?

ANSWER: The Army has complied with the language of the FY 88 report. Two contracts were awarded to both producers of M577 fuze in FY 88. In the transmittal letter accompanying the Army's report to the Congressional Oversight Committees submitted in June 1988, the Army stated that, as part of the transition from M577 to M762 Electronic Time Fuze, only one award would be made on the M577 fuze in FY 89. This was done to introduce competition on the M762 fuze and establish multiple sources as early as possible.

M577 Mechanical Time Fuze

QUESTION: Why hasn't the Army demonstrated to the Committee that the high cost of the M762 electronic fuze is justified for procurement now (as required by the report) when the fuze's remote set capability cannot be utilized until 1999?

ANSWER: The Army report stated that "based upon projected procurement buys, it is estimated that direct cost comparability will be realized after approximately three years of M762 fuze production". The remote setting feature of the M762 fuze provides one of the building blocks towards obtaining an automated howitzer system in order to provide higher rate of fire and contribute towards a reduction of crew size at the weapon. In addition, the cost of the remote set feature in the fuze represents less than two percent of its unit cost.

SUBCOMMITTEE RECESS

Senator INOUYE. So with that, we will now stand in recess until 10 o'clock tomorrow, at which time we will have a closed session with the Department of Defense to discuss space programs.

Thank you very much.

[Whereupon, at 4 p.m., Wednesday, May 17, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

TUESDAY, MAY 16, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Johnston, and Stevens.

DEPARTMENT OF DEFENSE

LAND WARFARE

STATEMENT OF LT. GEN. DONALD S. PIHL, MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE ARMY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION

ACCOMPANIED BY MAJ. GEN. WILSON SHOFFNER, ASSISTANT DEPUTY CHIEF OF STAFF OF THE ARMY FOR OPERATIONS AND PLANS

OPENING REMARKS

Senator INOUYE. Forgive me for this delay this morning, but I am also a member of the Commerce Committee, and we were looking after the concerns of little children and black people, and I am certain you will understand, sir.

This morning the Defense Subcommittee has asked senior military officers from the Department of the Army and the Marine Corps to enlighten this committee on how the services intend to fight the land war of today and tomorrow.

Along with this review of how doctrine, training, and force structure are determined, we have asked these officers to explain to the subcommittee how operational requirements are translated into new equipment acquisition programs.

It is my belief that our national security objectives and the missions assigned to each of the services to support each of these objectives should be the driving force behind our battlefield doctrine. This, in turn, should determine our strategy for new equipment acquisition.

Today, we face a declining defense budget. Therefore, the need to prioritize requirements based upon solving our most urgent military shortfalls is even more pronounced.

As the subcommittee reviews the Department of Defense budget request for 1990, one of our most important jobs will be to evaluate the operational priority of each individual weapons system and how each supports our national security needs.

It is quite clear at this time we cannot afford every weapons systems that the services want to fulfill their operational requirements.

President Bush recently submitted his revised 1990 budget request which reduces the original fiscal year 1990 request by $10 billion; $5.4 billion of that amount came from procurement programs, $1.5 billion from research and development.

In light of these reductions, the subcommittee is very interested in the operational which influence the decisions to reduce or terminate certain land warfare programs.

The subcommittee would also be interested to hear how the changes in the composition of the Soviet forces in Eastern Europe and in Asia were factored into the revised budget submission.

The subcommittee is pleased to welcome this morning Lt. Gen. Donald Pihl, Military Deputy to the Assistant Secretary of the Army for Research, Development, and Acquisition, Maj. Gen. Wilson Shoffner, Assistant Deputy Chief of State of the Army for Operations and Plans, Maj. Gen. Michael P. Sullivan, Deputy Commanding General, Marine Corps Combat Development Center and Director of the Marine War Fighting Center, and Maj. Gen. Ray M. Franklin, Commanding General of the Marine Corps Research, Development, and Acquisition Command.

Gentlemen, I thank all of you for coming this morning and look forward to your comments on the issues that I have outlined.

PREPARED STATEMENT

Before we begin I have an opening statement from Senator D'Amato that I would like placed in the record at this point.

[The statement follows:]

Statement of Senator Alfonse D'Amato

As a maritime power, our ability to project power overseas is essential. This year's defense budget, as in previous years, fails to come to grips with the continuing massive shortfall of sea- and airlift. That is to be expected. The nature of our defense establishment is such that lift was, is, and always will be an orphan. This tradition is one I intend to see ended.

A lack of real accountability has ensured that our lift shortfall will never be addressed. It is my intention to see the sizing of the Army and the Marines directly correlated to our ability to lift those forces where we need them. It is senseless to maintain a large and expensive Army and Marine Corps, the bulk of which is based in the United States, when we can only get a tiny fraction of that force and its equipment overseas in anything approaching a reasonable amount of time.

In the past, the Army and the Marines have bemoaned a lack of lift without really attempting to improve the situation. If, however, lift and force structure are linked, both services will have enormous incentive to ensure that this long-standing mismatch of capabilities is properly resolved.

Thank you, Mr. Chairman.

Senator Inouye. Who will be the first to start.

General Pihl. Good morning, Mr. Chairman, and members of the committee. It is my privilege to appear before this committee with my distinguished colleagues to discuss land warfare.

If I may, sir, for the Army, General Shoffner and I would like to submit our statements for the record, and then we will paraphrase as briefly as we can.

Senator **Inouye**. I can assure you that all of your statements will be made a part of the record.

General **Pihl**. Thank you, Mr. Chairman. General Shoffner will lead off discussing the threat, our doctrine, and our requirements process, and then I will get up and focus on a corporate overview of our force modernization strategy and a review of some of our major weapons systems.

STATEMENT OF MAJ. GEN. WILSON SHOFFNER

General **Shoffner**. Sir, my focus today is on force modernization of the total Army, a subject perhaps more important today than at any time since the Korean War.

We have a plan for force modernization of your Army which we believe can and must be carried out. Even during this period of increasing claims on too few resources in order to reinforce our success of our national security strategy in securing the vital interest of the United States.

In my comments today I will briefly address your Army's role in national military strategy, significant threat developments, our war fighting doctrine, and our strategy for force modernization.

Our national security strategy has guided us in assisting allies and friends in deterring potential foes and has begun to bear fruit at the arms control negotiating table. This success, perhaps unprecedented in the United States peacetime history, is due in large measure to sound policy backed by the visible, credible capabilities and readiness of our armed forces.

The Army has contributed to this success and has been deliberately configured to support national security objectives and meet our commitments worldwide. It has focused on providing the trained and ready forces needed by the field commanders who are charged with implementing our military strategy.

Our structure springs directly from strategy. The Army today is a balanced force that can meet the challenge of a particular conflict yet remains sufficiently flexible to be useful across a variety of types of conflict.

Your Army is a force carefully balanced to meet competing requirements within the resources it has been provided. It is a mix of heavy, light and special operations forces of U.S. based and forward deployed forces of combat and support forces and of active and reserve components.

The Army is and will continue to be a strategic force because the Army accomplishes certain essential tasks in peace and in war that only land forces can perform. The Army defends our vital interests in sustained land combat wherever those interests are threatened.

The Army has the active and reserve forces to support several authorities in disasters and crises. The Army has the elements of combat power and support needed for contingency operations and support of friendly nations, land forces around the globe, and the Army can provide the most visible and credible symbol of national resolve.

The soldier forward deployed on freedom's frontier, these include large combat formations forward deployed as deterrent forces in Europe, the Pacific, and the Far East, forces engaged in peacekeeping efforts in the Middle East, forces involved in treaty verification in the Soviet Union or perhaps those in Panama as a result of our latest rapid deployment.

The Army's requirements, therefore, are derived from the requirements of the United States for land forces that can implement its national security strategy around the world, and the requirements are driven by the threat, our war fighting doctrine, current Army capabilities versus those needed in the future and available technological opportunities. While we know that challenges to our national security are changing, neither the near-term nor much less the long-term applications of these changes are at all clear.

We have concerns, sir, that are threefold. First, we do not doubt that certain fundamental changes are underway in the Soviet Union, but the end result of these changes is not at all clear at this time. Second, while we also applaud the announced reduction in military production by the Soviet Union, we have seen no evidence that development and deployment of the most modern combat systems have in any way subsided, nor can we be assured of the permanence of these declared changes. Third and much more complex is the threat situation developing in the rest of the world.

All three of these concerns point to the need for the maintaining of trained, ready, and flexible conventional ground combat capability in your Army.

Our force modernization requirements are derived in part by the nature and capabilities of the threat and while we face varied worldwide threats, the Soviet Union remains the principal, potential threat to our national security interest.

Looking at the Soviet military today, many components appear to be in transition. While the specific military implications of these are uncertain, several things are clear.

First, the changes are being made in response to Soviet, not NATO considerations. The Soviets are forced to divert resources from the defense establishment to bolster a moribund civilian economy. Next, real changes are occurring with genuine and significant military consequence. For example, major Soviet unilateral reductions will affect the threat of a standing start attack and therefore affect warning time. And last, even with these changes, NATO will continue to face a formidable military challenge albeit a different one from the traditional threat with which it has become familiar.

Perestroika may lead to near-term as well as long-term enhancements in the Soviet military capability. For example, their change to a better balanced combined arms division is likely to be more effective both offensively and defensively than the original structure which was optimized for offensive maneuver.

Their smaller balanced organizations coupled with command and control improvements will enhance their force agility and their ability to rapidly concentrate combat power. Renewed emphasis on training by the Soviets will help bring to bear the full potential of their combat capability and a smaller standing force can mitigate some of the ethnic and demographic dilemmas they face in manning their force.

There are several important considerations for the Soviets. Their robust, committed, and effective research, development and acquisition infrastructure has been successful in negating the qualitative advantage previously enjoyed by NATO. An infrastructure that has been so successful for so long in such a vital area I would expect to endure under Gorbachev's restructuring.

Their increased spending in research and development reflects a longstanding concern by the Soviets about lagging in high technology areas, and a smaller force will have lower operating and support costs and an overall reduced requirement for procurement.

Accordingly, it will be less costly to modernize and I expect that modernization to continue. In fact, Soviet tank production for the first quarter of this year is the highest since World War II.

As a result, during the 2-year period of the announced 10,000 tank reduction from the force, the Soviets will probably produce some 5,000 to 8,000 new tanks. So, even with the announced cuts taking place, forces that will remain will be qualitatively the most capable units with the very best Soviet tanks and artillery, and they will still retain the quantitative edge from the Soviet perspective.

The net result is the prospect for long-term technological competition and the prospect for increased rates of modernization. So, in the long term, perestroika is not inconsistent with improved combat readiness of the Soviet army.

There is considerable rhetoric regarding defensive doctrine, but the Soviets have neither changed nor renounced the primacy of the offense, nor is there any manifestation of concrete change in force structure, force dispositions or weapons production that supports such a drastic shift.

Thus, at the strategic level while the new initiatives may reduce the burden of maintaining forces with overwhelming quantitative superiority, a burden which the Soviets have long borne, the qualitative modernization for the U.S. land forces continues and will remain. It may be, in fact, more severe. We must not place at risk the lethality or survivability of our forces facing a Soviet threat or a surrogate threat equipped by them.

One of the Army's highest priorities is developing the concepts to guide how the Army will fight in the future. Our evolution to the Army of the future must be planned and disciplined. It is imperative that on the future battlefield your Army be capable of achieving a clear, tactical advantage whenever it meets combatants. It must be capable of maintaining superior force agility, compelling asymmetric force exchange ratios, and fighting at the operational level which will link the strategic operational and tactical levels of war.

Our challenge is to continue to modernize the Total Army, both Active and reserve components. Modernization is a journey, not a destination. And modernization is more than equipment. It is the integration of new concepts, force designs, and training technologies with that new equipment.

Concurrent with the evolution of our doctrine and equipment is the corresponding evolution of our force structure. Our formation of light and special operations forces is representative of the change required by an evolving threat and national strategy.

Our heavy forces have been modernized over the past decade to reflect our evolving doctrine and the growing threat. But force modernization also includes training, the cornerstone of readiness, because tough, realistic peacetime training saves lives in war. Realistic training is also an investment in our future leaders.

The major lesson we have learned from our combat training centers in California and in Arkansas for both light and heavy forces is that battles are won or lost on the leader's ability to see and understand the battlefield and his ability to synchronize available combat power.

The reasons we modernize are straightforward: To enhance our war fighting capabilities, to leverage technical opportunities, or because our systems are unsafe or too expensive to operate and maintain.

Doctrine, organization, training, and leader development are vital but less visible components because of our overall modernization strategy. What is most visible due to the amount of money involved is the strategy for modernization of our equipment.

We are following a set of principles which are mined with future war fighting requirements, threat capabilities, and fiscal realities. The first principle is to put the most modern equipment in the hands of those who are first to fight. Second, we will not put at risk lethality or survivability of our force. And, third, we must field new or enhanced capabilities faster than our opponents.

Generally, the Soviets field major new systems roughly every 7 to 10 years. They do not, however, accomplish their research, development, and acquisition process faster than ours. They are about as lethargic as our process, a new system every 15 years, but there is one big difference. The Soviets use multiple design bureaus and production facilities. This allows them to develop simultaneously new or substantially improved tanks and to field them approximately every 7 to 8 years.

They have sequenced their massive infrastructure so as to field an alternative new capability every 7 to 8 years and in every 5-year plan for each design there is a new modification or improvement. Consequently, if we expect to be able to reduce the risk to our own forces, we must energize our own modernization system to be able to field new capabilities within the Soviets' 7- to 8-year fielding cycle.

While the challenges to Army force modernization are varied and formidable, our commitment to maintaining an Army capable of deterring and fighting remains steadfast and determined. We have developed a force modernization strategy that is embodied in a series of force modernization plans, and they are expressed in our fiscal year 1990 budget submit.

General Pihl will discuss our force modernization strategy and supporting programs.

FORCE MODERNIZATION—THE OPTIONS

Major improvements across the entire Army every 15 years.

Implications: RDTE expenditures relatively low; focus on procurement; relatively low force turbulence; and M+10 force probably obsolete while fielding final force package.

Block improve and field to portion of force every 5 to 6 years.

Implications: RDTE expenses increase to support concurrent tech base and FSED efforts; procurement quantities reduced to pay RDTE bill; higher force turbulence; and M+10 force always favorably matched to SOV Counterpart from qual. perspective.

PREPARED STATEMENT

Senator Inouye. Thank you, sir. We will place your prepared statement in the record at this point.

[The statement follows:]

STATEMENT OF MAJ. GEN. WILSON A. SHOFFNER

ADCSOPS, FORCE DEVELOPMENT, UNITED STATES ARMY

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

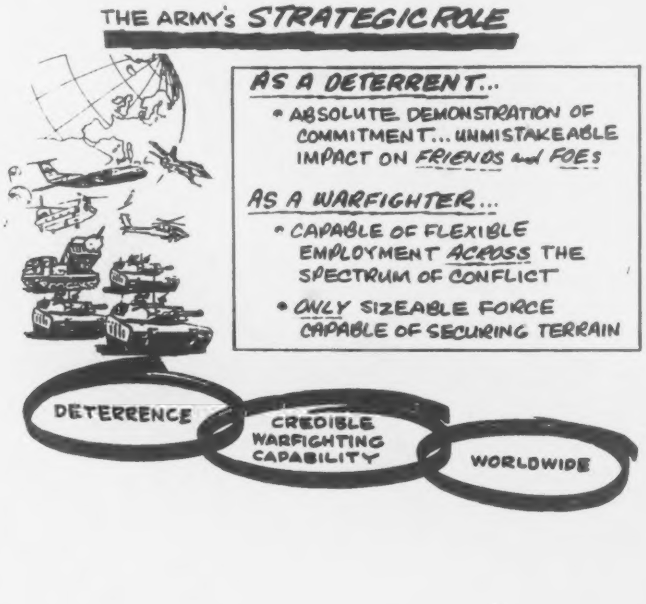
It is a privilege for me to appear before this committee with my distinguished colleagues to discuss land warfare. **My focus today is on force modernization of the total Army - a subject perhaps more important today than at any time since the Korean War.** We have a plan for force modernization which we believe can be and must be carried out - even during this period of increasing claims on too few resources - in order to reinforce success of National Security Strategy in securing the vital interests of the United States. **In my comments today I will discuss the threat, our warfighting doctrine and our strategy for force modernization necessary to deal with that threat. I will be followed by LTG Pihl who will provide program details.**

STRATEGIC BASIS

Our National Security Strategy has guided us in assisting our allies and friends, in deterring our potential foes, and has begun to bear fruit at the arms control negotiating table. This success, perhaps unprecedented in United States peacetime history, is due in large measure to sound policy backed by the visible, credible, capabilities and readiness of our armed forces.

The United States Army has contributed to this success. The Army has been deliberately configured to support U.S. National Security objectives and meet our commitments worldwide. It is designed to fulfill the strategic roles unique to the Army based on our assessment of the international security environment and the challenges to U.S. vital interests throughout the world. It is focused on providing the trained and ready forces needed by the U. S. Commanders-In-Chief who are charged with implementing our military strategy. **Thus the composition of the Army** - heavy forces, light forces, and special operations forces; active and reserve; forward deployed forces and forces poised in the United States for rapid response to contingencies worldwide or to reinforce forward deployments - **is based on the needs of our strategy.**

The Army's requirements, therefore, are the requirements of the United States for land forces that can implement its National Security Strategy around the world.


THE ARMY's STRATEGIC ROLE
AS A DETERRENT...
• ABSOLUTE DEMONSTRATION OF COMMITMENT... UNMISTAKEABLE IMPACT ON FRIENDS and FOES
AS A WARFIGHTER...
• CAPABLE OF FLEXIBLE EMPLOYMENT ACROSS THE SPECTRUM OF CONFLICT
• ONLY SIZEABLE FORCE CAPABLE OF SECURING TERRAIN
DETERRENCE
CREDIBLE WARFIGHTING CAPABILITY
WORLDWIDE

THE INTERNATIONAL SECURITY ENVIRONMENT

While we know that the challenges to our national security are changing, neither the near-term nor much less the long-term implications of these changes are at all clear. As expressed by General Vuono in his May 4 testimony before the Senate Armed Services Committee, we have concerns which are threefold:

- **First, we do not doubt that certain fundamental changes are underway in the Soviet Union.** Moreover, those changes can be very beneficial to the United States and to the entire community of nations, if they actually result in a less aggressive Soviet Union with fundamentally changed international objectives. However, even if the Soviets follow through with the reductions and changes which they have announced, they will still maintain a very substantial military capability and a threatening presence with their land forces in Europe.

- **Second, while we also applaud the announced reduction in military production by the Soviet Union, we have seen no evidence that the development and deployment of the most modern combat systems have in any way subsided.** It is possible that even after making the announced reductions, the Soviet Union and its Warsaw Pact allies will retain many of the advantages they currently enjoy over NATO forces.

- **Third, and much more complex, is the threat situation developing in the rest of the world.** Periods of change present a fertile environment for increased instability and increased danger. In the increasingly multipolar world, we face the potential of multiple threats - from countries and factions which are becoming more sophisticated militarily and more assertive politically.

All three of these troubling situations point to the need for maintaining a trained, ready, and flexible conventional ground combat capability in the United States Army.

THE ARMY AS A STRATEGIC FORCE

Within this broad National Security context, I want to review briefly the key roles that the Army plays, both in peace and war.

We often associate the term "strategic" with long-range nuclear forces. These nuclear forces are, of course, essential to our national security strategy. **We must recognize, however, that the U.S. Army is also a strategic force, one which plays unique and irreplaceable roles in securing the common defense.** Ground forces are essential to advancing our peacetime security interests and to deterring aggression. Ground forces are the ultimate means to defeat aggression against our citizens, our territory, and our interests.

The four wars that we have fought in this century have reaffirmed that war on any scale centers on the control of land people, resources, and the adversary's war making capabilities. While the unified action of all services is essential in modern war, only ground forces, capable of sustained operations are able to exercise decisive control and terminate the conflict on terms favorable to the United States and its allies. **The Army is and will continue to be a strategic force because the Army accomplishes certain essential tasks, in peace and in war, that only the Army can perform.**

- **only the Army can defend our vital interests in sustained land combat wherever those interests are threatened.** In combat, robust ground forces capable of sustained operations can dissuade an aggressor from expanding the conflict. Conversely, if required by National and Alliance strategy, Army forces provide an excellent instrument to widen a conflict through an intertheater shift of forces, by a major airborne operation, or by means of in-theater deep operations.

- **only the Army has the active and reserve forces to support civil authorities in disasters and crises.** The Army is ideally organized to assist in, or fight, low-intensity conflicts. Among the services, the Army alone has the capability to establish the infrastructure for a theater of war. Just as important, many of the key types of forces needed to engage in or help others to combat low-intensity conflicts exist only in the Army. Among these Army-unique forces are: the Special Forces, psychological operations units, and civil affairs units.

- **only the Army has the elements of combat power and support needed for contingency operations and support of friendly nation's land forces around the globe.** The Army maintains unmatched forcible entry capabilities. Our 82nd Airborne Division, 75th Rangers and Special Forces units can conduct parachute assaults or clandestine insertions anywhere in conflict of any level. The XVIII Airborne Corps headquarters and its support units, as well as the air assault and heavy follow-on units, give us the ability to project and employ a fully supported corps anywhere, under the most extreme conditions

- **and, only the Army can provide that most visible and credible symbol of national resolve, the soldier forward deployed on freedom's frontiers.** In areas where the United States has vital interests - such as Europe and Northeast Asia - forward deployed Army forces represent our nation's most lasting, powerful and, hence, credible commitment. In undeveloped areas, economy of force areas, or regions where political conditions militate against forward deployment, rapidly deployable Army forces represent a realistic counter to any aggressors threat.

To meet our National security objectives, the United States and its allies must understand the potential adversaries' intentions and be prepared to contend with the entire range of adversary capabilities. Three elements of the threat are especially important in understanding the strategic context in which the Army and its sister services must operate.

- **First, while our nuclear forces remain the bedrock of deterrence, our conventional forces are increasingly important as an alternative to early nuclear use.** The INF Treaty reinforces this trend.

- **Second, while the U.S. is certainly challenged by other threats not directly sponsored or controlled by the Soviet Union, the U.S.S.R. and its allies remain the principal threat to our interests in spite of the significant changes they are experiencing.** They will pose the most significant quantitative and qualitative challenge to our security for the foreseeable future.

- **Finally, the set of problems generally associated with the developing world** - insurgency, terrorism, chemical weapon proliferation, and the dramatic growth of conventional military capabilities in many developing countries - **remind us of the need for flexibility, mobility, and a ground force capable of sustained operations across the entire spectrum of conflict.**

THE ARMY TODAY

Structure springs directly from strategy. The Army today is a balanced force, that can meet the challenge of a particular conflict, yet remains sufficiently flexible to be useful across a variety of types of conflict. At 28 divisions and 22 combat brigades it is a force carefully balanced to meet competing requirements within the resources it has been provided. It is an optimal mix of heavy, light, and special operations forces; of U.S.-based and forward deployed forces; of combat and support forces; and of active and reserve components.

The Active Component provides forward deployed, contingency and rapid reinforcement forces for immediate use. However, our authorized active duty personnel strength is perilously small - the smallest since 1950. The civilian work force provides overseas and CONUS based support to sustain the deployed and deployable military forces.

Currently, Reserve Component forces comprise more than one half of the soldiers in our Total Army. Ten of our divisions are provided by the Army National Guard, and more than one-third of our 18 Active divisions include Reserve Component "roundout" brigades. Sixty percent of the support units required by our mobilized force are in the reserve components.

Today we have the right mix of forces - heavy, light, and special operations forces - **but we have them in inadequate numbers. Moreover, we are very close to the limit of reliance that we can safely place on the U.S. Army Reserve and National Guard,** considering our current National Strategy, our day-to-day commitments, and the burden of our immediate contingency requirements.

The further reduction to Active Army force structure which we have added to the reduction of 1989, in order to accommodate the reduced budget, **exacerbates the already substantial risk to our National Security Objectives as a result of the increased gap between worldwide requirements and the forces we can make available.**

Army requirements are derived for the most part from a combination of the international security environment, National Military Strategy, the threat, our warfighting doctrine, current Army capabilities versus those needed in the future and available technological opportunities. I have covered the international security environment and National Military Strategy. I would like to briefly address the more interesting of recent Soviet military developments.

SOVIET DEVELOPMENTS

Force modernization requirements are derived, in part, by the nature and capabilities of the threat. And while we face varied worldwide threats, the Soviet Union remains the principal threat to our national security interests. Therefore, let me address the most conspicuous components of contemporary Soviet affairs as a means of understanding their implications for Army force modernization.

Looking at the Soviet military today, many components appear to be in transition. Specifically, the potential for change is being manifested through pronouncements regarding: defensive doctrine, reasonable sufficiency, unilateral force reductions and restructuring, reductions in defense spending, and professed willingness for deep, asymmetrical cuts to achieve force parity in the region from the Atlantic to the Urals (ATTU).

While the specific military implications of these developments are uncertain, several things are clear:

- First, the changes are being made in response to Soviet - not NATO - considerations. The Soviets are forced to divert resources from the defense establishment to bolster a moribund (if not brain-dead) civilian economy.

- Next real changes are occurring with genuine and significant military consequence. For example, major Soviet unilateral reductions will effect the threat of a standing start attack and, therefore, will effect warning time.

- Lastly, even with these changes NATO will continue to face a formidable military challenge, albeit a different one, from the traditional threat with which it has become familiar.

Perestroika (Restructuring) may lead to near term as well as long term enhancements in Soviet military capabilities. With the significant improvements to command and control, and a unifying concept for high tempo conventional operations already established:

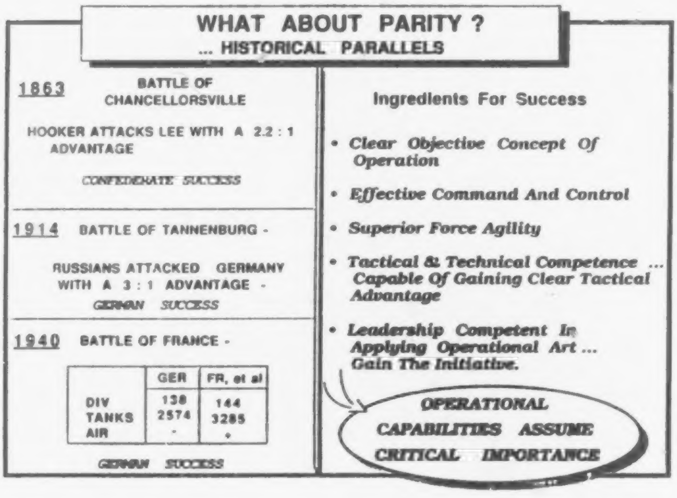
- Their change to a better balanced combined arms division is likely to be more effective, both offensive and defensively, than the original structure that was optimized for offensive maneuver.

- Smaller, balanced organizations coupled with command and control improvements will enhance their force agility and their ability to concentrate combat power capability.

- Renewed emphasis on training will help bring to bear the full potential of their combat capability.

- A smaller standing force can mitigate some of the ethnic and demographic dilemmas they face in manning their force.

Bold soviet proposals for reductions to parity are no guarantee of peace. History reveals telling examples of successful operations at parity or less.



WHAT ABOUT PARITY ?
... HISTORICAL PARALLELS

1863 BATTLE OF CHANCELLORSVILLE

HOOKER ATTACKS LEE WITH A 2.2 : 1 ADVANTAGE

CONFEDERATE SUCCESS

1914 BATTLE OF TANNENBURG -

RUSSIANS ATTACKED GERMANY WITH A 3 : 1 ADVANTAGE -
GERMAN SUCCESS

1940 BATTLE OF FRANCE -

	GER	FR, et al
DIV	138	144
TANKS	2574	3285
AIR	-	+

GERMAN SUCCESS

Ingredients For Success

- *Clear Objective Concept Of Operation*
- *Effective Command And Control*
- *Superior Force Agility*
- *Tactical & Technical Competence ... Capable Of Gaining Clear Tactical Advantage*
- *Leadership Competent In Applying Operational Art ... Gain The Initiative.*

OPERATIONAL CAPABILITIES ASSUME CRITICAL IMPORTANCE

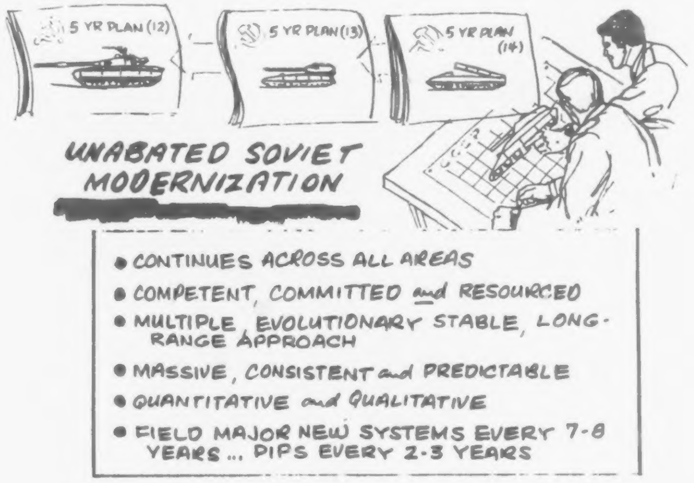
The Japanese, outnumbered 8:5, attacked the British on the Malayan Peninsula in 1941-42. The Japanese won. In 1940, the Germans attacked France with a numerically inferior force. The Germans were successful. And in 1863, General Lee defeated Hooker at Chancellorsville when the Confederates were outnumbered 2:1.

, In these cases where numerically inferior forces conducted successful operations, several key ingredients for success are always demonstrated. First, the leadership is competent in the application of operational art and at gaining the initiative. Next forces are tactically and technically competent, and capable of gaining a clear tactical advantage when the combatants engage. Third, the smaller forces display superior command and control, and force agility. And finally, in all cases the winners had clear operational concepts and objectives.

Victory will go to the side which is superior in each of these areas. The challenge to U.S. and NATO is to continue to improve operational level capability - to include command and control, and to modernize its forces. Should deterrence fail and combatants engage on the battlefield, we cannot risk the lethality or survivability of our forces. There must be no doubt as to the outcome to those battles. We must have tactically competent forces - trained and ready.

As with us, modernization will remain a challenge to the Soviets. Salient dynamics of future Soviet modernization efforts include:

- **Their robust, committed and effective research, development and production infrastructure has been successful in negating the qualitative advantage previously enjoyed by NATO.** An infrastructure that has been so successful for so long in such a vital area will endure under Perestroika.



UNABATED SOVIET MODERNIZATION

- CONTINUES ACROSS ALL AREAS
- COMPETENT, COMMITTED and RESOURCED
- MULTIPLE, EVOLUTIONARY STABLE, LONG-RANGE APPROACH
- MASSIVE, CONSISTENT and PREDICTABLE
- QUANTITATIVE and QUALITATIVE
- FIELD MAJOR NEW SYSTEMS EVERY 7-8 YEARS ... PIPS EVERY 2-3 YEARS

- **Increased spending in research and development reflects a long-standing concern by the Soviets about lagging in high technology areas.** We would expect the increased spending in their research and development, announced by Soviet Finance Minister B.I. Gostev, will leverage the previous large investments in military design bureaus and production facilities.

- A smaller force will have lower operating and support costs and an overall reduced requirement for procurement. Accordingly, it will be less costly to modernize, and that modernization will continue. In fact, the Soviet tank production for the first quarter of this year is the highest since World War II. As a result, during the two year period of the announced 10,000 tank reduction from the force, the Soviets will probably produce 5,000 or more new tanks. Even if the announced cuts take place, forces that remain will be qualitatively the most capable units with the very best in Soviet tanks and artillery. And they still retain a quantitative edge.

From the Soviet perspective, the net result of these notions is that there is the prospect for long term technological competitiveness and the prospect for near term modernization at current or increased rates.

In July 1988, General Yazov, the Defense Minister, cited "rapid implementation of scientific conclusions as the priority task in military sciences". This comment captures the thrust for modernization of the Soviet Forces.

So in the long term, Perestroika is not inconsistent with improved combat readiness of the Soviet Army. There is considerable rhetoric regarding "defensive doctrine", but the Soviets have neither changed nor renounced the primacy of the offense. Nor is there any manifestation of concrete change in force structure, force dispositions, or weapons production that supports such a drastic shift.

In commenting on the unilateral withdrawal of Soviet Forces, General Snetkov - Commander of Soviet Group of Forces in Germany, said he wanted to emphasize that "the withdrawal of Soviet troops from German Democratic Republic reduced by not a jot the level of security of the U.S.S.R and our ally the G.D.R". Snetkov went on to comment that "some of the tanks would be mothballed, east of the Urals".

The most recent version of the Soviet capstone doctrinal statement - Taktika '87 - is consistent with the forms of combat reflected by their structure and the statements of their field commanders. While Taktika '87 places increased emphasis on force agility, fire support, and command and control, the offense is recognized as the only decisive form of combat.

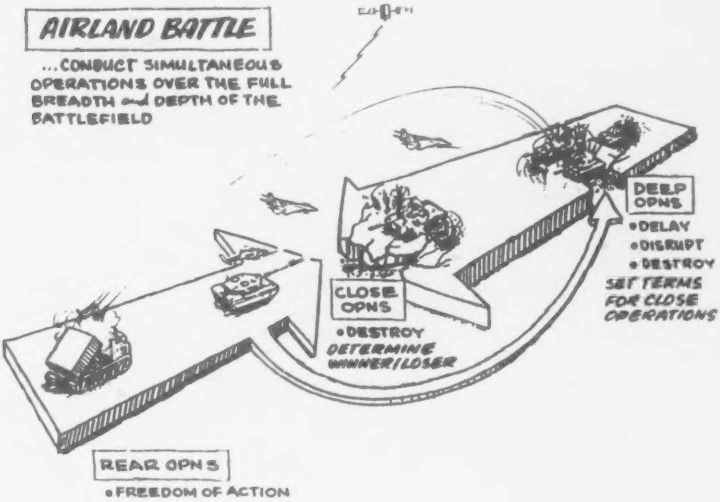
Thus, at the strategic level, while the new initiatives may reduce the burden of maintaining forces with overwhelming quantitative superiority long borne by the Soviets, the qualitative modernization challenge for United States land forces continues and will remain. It may in fact be more severe. We must not place at risk the lethality and survivability of our forces facing the Soviet threat - or a surrogate threat equipped by them.

AIRLAND BATTLE

AirLand Battle is the basic doctrine that guides the U.S. Army's approach to warfighting. The fundamental imperative of AirLand Battle is to secure the initiative and exercise it aggressively.

AirLand Battle's major contributions to American military thought are two: the reintroduction of the operational art as a key link between tactics and strategy, and the view of the unity of the battlefield - which transcends services, echelons, and national military components.
AirLand Battle reflects the structure of modern warfare, the dynamics of combat power, and the application of the classical principles of war the contemporary battlefield. It's very name AirLand Battle is recognition of the inherently three dimensional, Joint and Combined, nature of modern warfare -- that all ground actions will be strongly affected by air operations of both combatants.

Articulated in Field Manual (FM) 100-5, Operations, AirLand Battle forms the basis for planning and conducting campaigns, major operations, battles, and engagements in conjunction with other services and allied forces. It serves as the foundation for developing subordinate doctrine, force design, materiel acquisition, individual and unit training and leader development. Although it emphasizes conventional operations, it recognizes Army forces must be able to perform effectively in any battlefield environment.


AIRLAND BATTLE
...CONDUCT SIMULTANEOUS OPERATIONS OVER THE FULL BREADTH and DEPTH OF THE BATTLEFIELD
DEEP OPNS
•DELAY
•DISRUPT
•DESTROY
SET TERMS FOR CLOSE OPERATIONS
CLOSE OPNS
•DESTROY
DETERMINE WINNER/LOSER
REAR OPNS
•FREEDOM OF ACTION

The essence of AirLand Battle is simultaneous operations over the full breadth and depth of the battlefield. Commanders at all levels must fight simultaneous close operations to destroy enemy forces at the point of contact; deep operations to delay and disrupt enemy follow-on forces to create opportunities for success in close operations; and rear operations to retain freedom of action for friendly sustainment and movement of reserve forces.

The basic tenets of AirLand Battle are initiative - setting or changing the terms of battle by action; **agility** - the ability of friendly forces to act faster than the enemy; **depth** - the extension of operations in space, time and resources; **and synchronization** - the arrangement of battlefield activities in time, space and purpose to produce decisive combat power at the required time and place.

AirLand Battle is maneuver based and stresses the combined arms team - to rapidly concentrate decisive combat power at the critical times and places on the battlefield. **It is leader intensive, capitalizing on the initiative and the competency of the combined arms leader.** Operations are driven by the concept and intentions of the commander for controlling and synchronizing forces.

AirLand Battle doctrine provides guidelines, not rigid procedures. It may be adapted as necessary to conform to U.S. and Alliance policies and strategy, and the nature of the specific regions and battlefields to which Army forces are committed. However it **requires soldiers and leaders who understand its tenets and are tactically and technically competent.**

The full potential of Army forces operations according to AirLand Battle doctrine, is achieved only with modern equipment and well trained, motivated high quality soldiers and leaders.

AIRLAND BATTLE FUTURE

One of the Army's highest priorities is developing the concepts to guide how the Army will fight in the future. Our current AirLand Battle doctrine will guide the U.S. Army into the 21st century. The basic tenets - agility, initiative, depth, and synchronization - will most likely remain valid while emerging technologies and capabilities will improve our application of combat power.

The focus of how we will fight 15 years from now, the AirLand Battle-Future Concept, is being developed based upon projections of threat capabilities, our worldwide commitments, and technological opportunities that may become available. Applied across the spectrum of conflict, AirLand Battle Future represents an evolution of our current AirLand Battle doctrine to meet our global requirements in the year 2004 and beyond. The concept is intended to guide development of our doctrine, equipment, organization, training and leader development.

Our evolution to the Army of the future must be planned and disciplined. While the shape and composition of that future Army are not yet evident, it is imperative that the future Army must be capable of:

- **Retaining a clear tactical advantage wherever committed.** We must dominate the close battle through application of advanced technologies to the combined arms which enable us to continue to present any adversary with several problems simultaneously - any one of which is lethal.

- **Fight at the operational level.** We must continue to be able to conduct simultaneous operations over the full depth and breadth of the battlefield. We must attack in depth at the same time that we are dominating the close battle.

- **Maintain superior force agility. Force agility has both a physical and mental component.** Mental agility is the ability of commanders to think, decide and act faster than the opponent. Force agility is the ability of formations at all levels to be able to shift the main effort quickly - to engage, disengage (re-cock) then re-engage and since outnumbered, endure to do it all over again.

- **Compelling asymmetric force exchange advantages.** The adversary outnumbers us and gets to pick the time and place of attack. If we must on the average have perhaps a 3 or 4:1 force exchange advantage in order to fight outnumbered and win - and we expect to have some bad days - then we must on a good day have the capability to achieve an even higher force exchange ratio; perhaps on the order of 10:1.

- **Linking the strategic, operational and tactical levels of war.** As Harry Summers' Vietnam analogy of tactical victory yet strategic defeat points out, it remains essential that the strategic, tactical and operational levels of war be linked. The following was part of a conversation which occured on 25 April 1975 in Hanoi between Colonel Harry G. Summers Jr., then Chief, Negotiations Division, U.S. Delegation, Four Party Joint Military Team and Colonel Tu, Chief, North Vietnamese (DRV) Delegation:

"You know you never defeated us on the battlefield, " said the American colonel.

"The North Vietnamese colonel pondered this remark a moment. "That may be so, "he replied, "but it is also irrelevant".

ARMY FORCE MODERNIZATION - AN OVERVIEW

To this point my comments have been intended to provide you with some insight into the role of landpower in National Military Strategy, the threat and AirLand battle doctrine which - taken together - provide the warfighting rationale which is the basis for Army force modernization.

Succinctly stated, **our challenge is to continue to modernize the Total Army** - both Active and Reserve Components and Heavy, Light and Special Operations Forces - **given the uncertainties of the strategic environment and this nations many unmet competing needs which along with Defense vie for too few resources.**

You might ask - what is force modernization and why must it be done? Let me take a moment to explain.....

Modernization is a journey, not a destination. We are never finished modernizing. It is a continuous process to enhance and sustain the Army's required warfighting capability as the threat, doctrinal requirements, and technological opportunities evolve.

And modernization is more than just equipment; it is the integration of new concepts, force designs, and training technologies with that new equipment. We've cut some programs and reduced the pace of equipment modernization - but we will never stop modernizing, because we view modernization as a continuous process, not a discrete event.

The reasons we modernize are straightforward. First and foremost, as already noted, we modernize **to enhance warfighting capabilities.** But it is more - we also modernize **because our systems become unsafe to operate, too costly to operate and maintain, or no longer supportable.** And, we modernize **to leverage technological opportunity.** Collectively, these factors describe the rationale for equipment modernization.

Because of the fundamental role it plays in our force modernization strategy let me again emphasize the importance of AirLand Battle Doctrine. **Our Chief of Staff, General Vuono has said "The Army's AirLand Battle Doctrine guides its approach to warfighting on contemporary battlefields worldwide, and is the basis for all aspects - materiel and non-materiel, of force modernization. Further, AirLand Battle Doctrine recognizes the need to project our Joint and Combined strengths against our opponents - an embedded 'competitive strategies' approach to warfighting".**

Concurrent with the evolution of our doctrine and materiel is the evolution of our force structure. This is an essential component of force modernization if we expect organizational structures to be compatible with modern warfighting requirements. In the area of light and special operations forces alone, the eight years beginning with 1980 saw major improvements in our capabilities through formation of: Rapid Deployment Joint Task Force, Special Operations Command, United States Central Command, Aviation Branch, 35th Infantry Division(ARNG), a special forces group and ranger regiment, 6th and 7th Infantry Divisions, 10th Mountain Division and U.S. Army South. Additionally throughout the Total Army, units continue converting from older J and H series tables of organization and equipment (TOE) to our most modern organizational structure - the L series TOE. Through fiscal year 1994 units organized under the L series TOE are scheduled to increase from approximately 1000 to 3700, underscoring the fact that force design is continuously in transition.

Force modernization also includes training, the cornerstone of readiness - because tough, realistic, peace-time training saves lives in war. Good training melds soldiers, doctrine, and equipment into combat ready units. It enhances deterrence by showing both friends and enemies that we are ready to fulfill our responsibilities as a major power. It meets our obligations to our soldiers by ensuring that they are fully prepared before we send them into combat. It teaches the various parts of our Nation's defense establishment - active, reserve, civilian members and sister services - to work together with maximum efficiency. And it lays the foundation for a ready Army in the future.

Our Combat Training Centers include three instrumented tactical field sites and a wargaming program designed to train participants for combat across the spectrum of conflict. The National Training Center at Ft. Irwin, California, the Joint Readiness Training Center at Ft. Chaffee, Arkansas, the Combat Maneuver Training Center at Hoehenfels, Germany, and the Battle Command Training Program, Ft Leavenworth, Kansas - **provide unit commanders and their soldiers with tough, realistic combined arms and joint services training in accordance with AirLand Battle doctrine and is the best anywhere in the free world.**

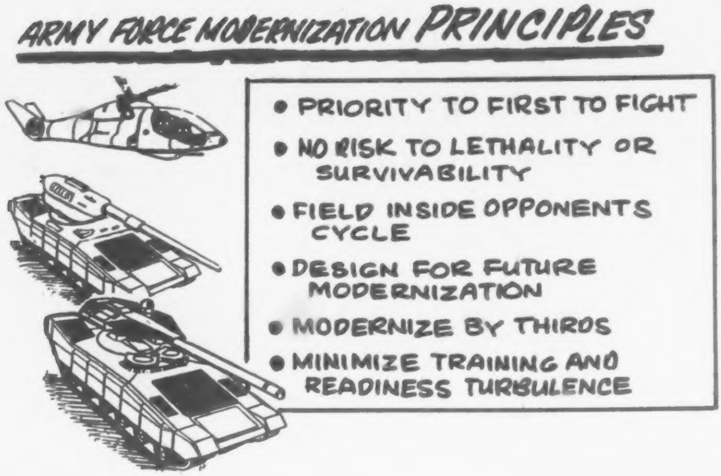
The major lesson we've learned from Combat Training Centers - for both light and heavy forces - is that battles are won or lost on the leader's ability to see and understand the battlefield and his ability to synchronize available combat power Commanders must develop mental agility to think, decide, and act faster than the opponent - to envision the operation and apply combat power at the critical place and time.

Our leader development program is based on three pillars - formal education, augmented by self-development and operational experience. And - within the context of evaluation of all the schools with the DOD system of Professional Military Education - **the Skelton panel's Final Report judges the Army program as basically sound.** The report's most pointed criticism of Army schools are the comment on the high proportion of Command and General Staff College faculty who are non-resident graduates and the assertion that the U. S. Army War College curriculum lacks a clearly defined focus. On the positive side, the report singles out for praise, instruction on the operational level of war at Leavenworth's School of Advance Military Studies, and the comparatively high proportion of the Command and General Staff Officer Course curriculum devoted to active - vice passive - learning. The report also acknowledges the efforts undertaken within this past year at Carlisle to re-assess the mission and curriculum of the U.S. Army War College.

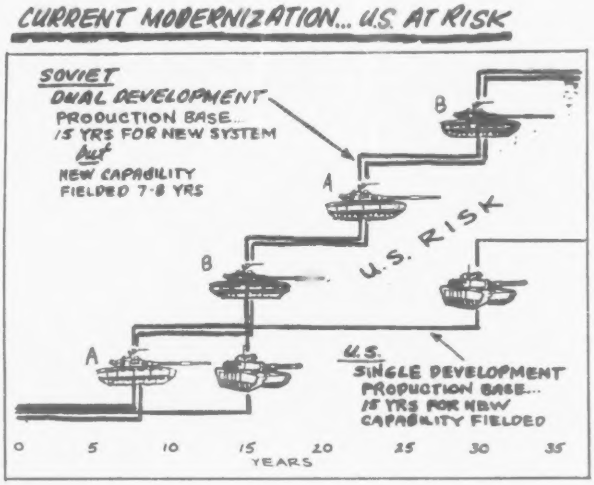
Doctrine, organization, training and leader development are vital but less visible components of our overall modernization strategy. What is most visible - due to the amount of money involved - is the strategy for modernization of our equipment. Our equipment modernization strategy is one which takes a disciplined evolutionary approach and which has three key features: continued procurement and modernization of current systems to maintain our near term readiness; aggressive, focused research and development to ensure future readiness; and force packaging to integrate and synchronize our modernization efforts across the Army over time. **Implementation requires adherence to a set of principles which are aligned with future warfighting requirements, threat capabilities, and fiscal realities.**

- **The first principle is to put the most modern equipment in the hands of those who are first to fight.** This ensures that the most capable equipment will be provided to the forces that will be first to be committed.

- **Second, we will not put at risk lethality or survivability.** It is essential that we continue to field direct and indirect fire systems that possess the degree of lethality needed to kill the enemy, while maximizing the survivability of our own soldiers and systems.

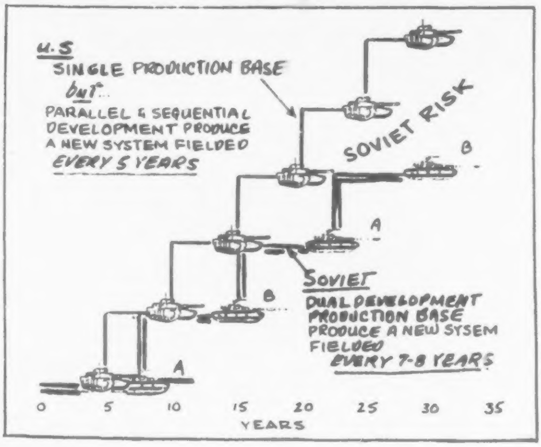

ARMY FORCE MODERNIZATION PRINCIPLES
• PRIORITY TO FIRST TO FIGHT
• NO RISK TO LETHALITY OR SURVIVABILITY
• FIELD INSIDE OPPONENTS CYCLE
• DESIGN FOR FUTURE MODERNIZATION
• MODERNIZE BY THIRDS
• MINIMIZE TRAINING AND READINESS TURBULENCE

- Third, we must field new or enhanced capabilities faster than our opponents. Generally, the Soviets field major new systems roughly every seven to ten years. They do not, however, accomplish their research, development and acquisition (RDA) process faster than ours. In fact, the RDA times of the two systems are not drastically dissimilar. Rather, they accomplish this because of the redundancy and commitment of their modernization effort. For example, using a single development production base we routinely develop and field new and improved tanks sequentially; and it takes us about 15 years. The Soviets conversely, use multiple design bureaus and production facilities. This allows them to develop simultaneously new or substantially improved tanks, and to field them approximately every seven to eight years.


CURRENT MODERNIZATION... U.S. AT RISK
SOVIET
DUAL DEVELOPMENT
PRODUCTION BASE...
15 YRS FOR NEW SYSTEM
but
NEW CAPABILITY
FIELDED 7-8 YRS
A
B
A
B
U.S. RISK
U.S.
SINGLE DEVELOPMENT
PRODUCTION BASE...
15 YRS FOR NEW
CAPABILITY FIELDED
0
5
10
15
20
25
30
35
YEARS

Consequently, if we expect to be able to reduce the risk to our own forces, we must accelerate our own modernization system to be able to field new capabilities within the Soviet's seven to ten year fielding cycle. We could continue to modernize sequentially through the force every 15 years. That means between when the first new tank arrived in the first to fight forces and the last of that new tank arrived in the last of the Reserve Component forces to be equipped, 15 years would have been required to get the total force equipped. We have made a conscious policy decision not to do that - which leads us to our fourth principle.....

U.S 5 YEAR CYCLE MODERNIZATION... SOVIETS AT RISK



- **Fourth, we must design systems with future modernization in mind.** The objective is to avoid premature obsolescence and unnecessary cost by designing systems that facilitate programmed block improvements and the application of evolving technologies. **We plan to focus the technology base to provide technology packages ready for system development every 5 to 6 years.** Concurrently this approach requires full scale engineering development (FSED) of a new or block improved system so that it is ready to be fielded at the same frequency. **This combined with the fifth principle of modernizing the force in thirds will allow us to modernize our first to fight units at a 5 to 6 year pace. This will be an effective counter to Soviet modernization, and place at risk their first strategic echelon - which is modernized at a 7 year pace.**

- **Fifth, is the principle of modernizing the force by thirds.** Under this principle, we recognize at the outset that fiscal constraints will prevent us from fielding new systems throughout the Total Army. Therefore, based on the first to fight principle, the force is divided roughly into thirds and new equipment fielding priorities are established commensurate with this alignment. I will go into this more deeply in a moment.

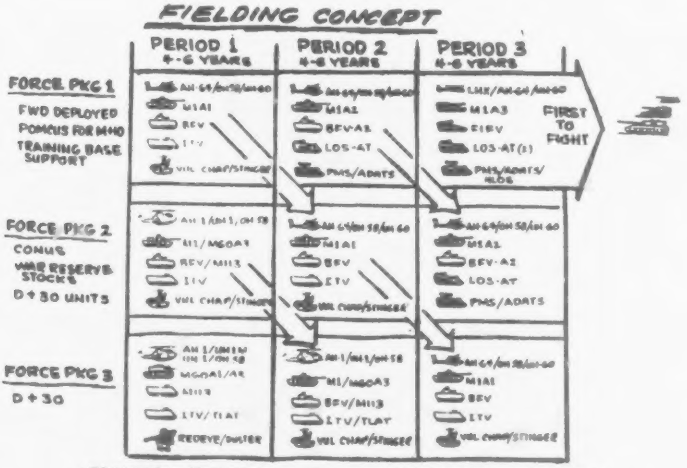
- **The sixth and final principle calls for minimizing the training and readiness turbulence that occurs frequently when new equipment is fielded in the force.** The goal is to field systems that require minimal new equipment training for soldiers, are reliable, and are simple to fight, operate and maintain.

Let me now explain the approach we will use in applying the force modernization principles. The approach means that we will:

- **Maintain a focused, harnessed, stable technology base (tech base) program.** The tech base is an important corporate investment in the Army's future. It offers the Army the capability of exploiting evolutionary and revolutionary technological opportunity - a crucial capability considering that we no longer enjoy a significant qualitative technological edge over the Soviets. As we leverage technological opportunities we must also retain the option to insert that technology into programs after they have begun.

- **Develop Functional Area Modernization Plans** (for example: Aviation, Heavy Force, Fire Support; Tactical Wheeled Vehicles etc.) which will have a long range - 30 year - perspective of the Total Army modernization requirements and will recognize fiscal realities. Included in the plans will be the strategy for modernizing heavy, light, and special operations forces. Further, the force modernization plans will be coherent and integrated, will support continuous development, fielding and displacement of systems over the 30 year period, and will allow us to leverage technological opportunities. Another innovative characteristic of these modernization plans is their goal to manage the age of the fleet of equipment within functional areas, and to control the operating cost of systems. Given available resources and established programs, we will maintain level funding of our programs, and avoid the budget "bow waves" which have caused capability "gaps" in the past. Steady, committed, sustained funding of our programs will ensure our ability to field capable systems over the long term.

- **Modernize the Total Army by Force Package.** This approach divides the Total Army into three force packages based on the "first to fight" principle. Under this concept, forward deployed and rapidly deployable forces will receive new systems. The equipment displaced from these units will be refurbished and product improved as needed. Upgraded equipment will be issued to the units of the second force package - whose displaced equipment will be upgraded and reissued to units comprising the third force package. **In this way we plan to continually modernize our total force inside the Soviet's modernization cycle.**


FIELDING CONCEPT
PERIOD 1
4-6 YEARS
PERIOD 2
4-6 YEARS
PERIOD 3
4-6 YEARS
FORCE PKG 1
FWD DEPLOYED
POMCUS FOR M+10
TRAINING BASE SUPPORT
FORCE PKG 2
CONUS
WAR RESERVE STOCKS
D+30 UNITS
FORCE PKG 3
D+30
AH 64/OH 58/AH 60
M1A1
BFV
ITV
VUL CHAP/STINGER
M1A2
BFV-A2
LOS-AT
FMS/ADATS
LHX/AH-64/AH-60
M1A3
FIFV
LOS-AT (2)
FMS/ADATS/NLOS
FIRST TO FIGHT
AH 1/AH 1, OH 58
M1/M60A3
BFV/M113
ITV
VUL CHAP/STINGER
AH 64/OH 58/AH 60
M1A1
BFV
ITV
VUL CHAP/STINGER
AH 64/OH 58/AH 60
M1A2
BFV-A2
LOS-AT
FMS/ADATS
AH 1/UH 1H
OH 1/OH 58
M60A1/A3
M113
ITV/TLAT
REDEYE/DUSTER
AH-1/AH 1/OH 58
M1/M60A3
BFV/M113
ITV/TLAT
VUL CHAP/STINGER
AH 64/OH 58/AH 60
M1A1
BFV
ITV
VUL CHAP/STINGER

- EACH FORCE PACKAGE COMPRISED OF ROUGHLY 1/3 OF THE FORCE
- DESCRIPTION OF SYSTEM NOT ALL INCLUSIVE

- Lighten systems and forces to enhance deployability and to improve agility.

- Support force design (TOE) enhancements to keep pace with new capabilities and evolving doctrine.

- Recognize the unit training implications of systems fielding, and integrate new equipment training for soldiers into functional modernization plans.

- Accommodate Joint applications and Combined considerations.

Our force modernization strategy encompasses the total Army's heavy, light, and special operations forces. But, because the threat requires the majority of our force to be heavy, and because heavy divisions are significantly more costly to equip, operate, maintain, and sustain, the heavy force drives the Army's overall force modernization strategy. So, to serve as an example of our functional modernization plans I want to discuss the Army's Heavy Force Modernization Plan in some detail.

The Heavy Force Modernization Plan describes the Army's strategy for modernizing its heavy forces. As dynamic as the Heavy Force Modernization Plan is, it is important to recognize that it does not introduce new concepts. Rather it applies at the outset procedures which previously were applied after programs had already begun. The Heavy Force Modernization Plan is based on the results of thorough assessment of current heavy force capabilities relative to the present and future requirements of the battlefield and the need to accelerate the fielding of advanced technology systems; and an understanding that we must find better, more efficient ways to do business.

The Heavy Force Modernization Plan is a coherent, focused approach to modernization which guides the Army to the future by means of a disciplined evolution that exploits evolving technologies. Its central concept is to exploit economies of modernizing through a family of vehicles approach.

Specifically, this concept envisions the Close Combat Heavy combined arms force and its support systems being designed and developed to maximize commonality of components. This approach uses common chassis for both heavy and medium systems. These chassis will incorporate mission modules which will provide significant battlefield payoff in terms of operational effectiveness and compatibility, and further enhanced by support cost savings. In production, the common chassis approach offers significant cost savings because of high production rates. Overall affordability considerations shaped the decision to prioritize among the 24 systems for which requirements were identified. From the prioritization process, six systems were identified as most critical. The initial systems to be fielded under the current Heavy Force Modernization Plan are: The Block III Tank, The Future Infantry Fighting Vehicle, The Combat Mobility Vehicle, The Line-of-Sight Anti-Tank, The Advanced Field Artillery System, and the Future Armored Rearm Vehicle - Ammo. The Line-of-sight Anti-tank and the Future Armored Rearm Vehicle will be built on a common medium chassis; the remaining systems on a common heavy chassis.

While the focus to this point has been on the Army's strategy to modernize the Heavy Force, other functional plans have been developed. Guided by the principles expressed which I have described, we have produced plans to modernize our Armor/Anti-Armor capabilities, Aviation systems, Fire Support Systems and Tactical Wheeled Vehicles. Let me touch on each of them briefly:

- **The Armor/Anti-Armor Modernization Plan** encompasses major ammunition upgrades, an Anti-Armor Weapons System-Medium, Improved Tow and Hellfire Programs, and the Hypervelocity Missile and Wide Area Mine Programs. It has four parts, the first two which direct near term modernization; the last two the longer term.

  - First we continue acquisition of our current best equipment to provide needed capabilities now, to our highest priority active and reserve units. This also means we will protect our investment with qualitative improvements in our fielded systems to achieve an overmatch on fielded Soviet systems.

  - Second, for every equipment system in the modernization plan, we will always have a qualitative improvement in full scale engineering and development.

  - Third, we will continue research and development on new systems for the 21st century.

  - Fourth, the real value of the A3 modernization plan is to uphold the discipline in our drive for shaping the future of our Armor force.

- **The Aviation Modernization Plan** describes fleet composition thirty years in the future and includes programs across the fleet to include the LHX and others to include reconnaissance, attack, cargo and utility aircraft.

- **The Fire Support Modernization Plan** recognizes requirements for the Advanced Field Artillery Tactical Data System, The 155mm Howitzer Improvement Program, the Advance Field Artillery System, Firefinder Radar Improvements, The Sense and Destroy Armor Munition, The Army Tactical Missile System, Tacit Rainbow, Follow-on to Lance, an Unmanned Aerial Vehicle, and the Army portion of the Joint Surveillance Target Acquisition and Reconnaissance System programs.

- **The Tactical Wheeled Vehicle Modernization Plan** describes fleet composition and programs for: The Commercial Utility Cargo Vehicle and High Mobility Multi-Purpose Wheeled Vehicle, The Family of Medium Tactical Vehicles, 2 1/2 and 5 Ton Service Life Extensions, the Heavy Expanded Mobility Tactical Truck, the Palletized Loading System and the Heavy Equipment Transporter.

CHALLENGES TO FORCE MODERNIZATION

Clearly, the Army has developed a coherent, disciplined force modernization strategy which encompasses enhanced doctrine, materiel and force design training and leader development. But the challenges are formidable. Our success over time depends largely on our ability to recognize, prioritize and minimize their effects. To recount:

- **The United States remains a global power with worldwide regional interests.** As a strategic force, the Army must retain the capability to project military power with modernized heavy, light, and special operations forces.

- **We face the constantly rising costs of operating, maintaining, and paying our Army.**

- **We face the uncertainties of conventional force reduction negotiations and other international developments.**

- **We face fiscal realities which are rapidly and significantly eroding the Army's budget;** during the past few years we have been unable to maintain the pace of modernization due to resource constraints.

Modernization in the years ahead will challenge our ingenuity and demand adequate and stable resources. We must continue to develop and field high quality, technologically superior systems which support operations across the entire battlefield and can help us pit our enduring strengths against an adversary's vulnerabilities. The Army's current modernization strategy is designed to accomplish that. Our strategy and modernization plans enforce a disciplined process that allows us to adjust to changes in the threat, technology, and resources.

The revised Army budget keeps all our basic modernization plans on track. However, in Aviation we had to reduce the scope of our plan significantly. While we will continue with the LHX as the centerpiece of the capabilities we need for the future, we had to scale back procurement of Apache and Blackhawk helicopters, and to terminate the OH -58D AHIP with this year's acquisition. These aviation reductions have also necessitated a slight reduction in some of our aviation units.

In heavy forces, we maintained economic levels of procurement for the Bradley fighting vehicle and the M1A1 Abrams Tank. We also continue our evolution to the future as we preserve the R&D investment for the improvements which will lead us to the M1A2 Abrams Tank beginning in 1992. In both of these major areas we have acted in accordance with Army priorities to accept some degree of near-term risk in order to assure future capability to achieve overmatch with respect to the worldwide threat.

The quantity of modern equipment currently fielded is less than we would like in confronting the size, capabilities and complexity of the threats we face worldwide. Moreover, increasingly, the most modern Soviet equipment is challenging our technological lead upon which we and our allies have relied so heavily in the past. We are experiencing a quantitative and qualitative disadvantage in ground forces against our primary adversary that is unlikely to disappear even with full implementation of the initiatives General Secretary Gorbachev has publicly announced. We cannot continue to place at risk the qualitative edge that we must have to offset the quantitative and geographical advantages of our principal adversary.

Restructuring, openness, reasonable sufficiency, and force reductions are some of the initiatives that are softening the perception of "the threat" held by many in the west. While, in the near term, it may be true that the Soviets cannot afford to bear the "burden of the offense', and that a truly "defensive doctrine" may become a reality, change will be neither swift nor assured. Further, with a long term view, we must consider the implications of an economically revitalized Soviet Union. A Soviet Union with a potent economy, a strong science and technology base, and the political incentive, could continue aggressive modernization and increase force structure to pre-CFE talks levels. Consequently, we and our allies must not be deluded by the current state of Soviet affairs.

During his swearing in ceremony, Secretary of Defense Dick Cheney said, "We must guard against gambling our Nation's security on what may be a temporary aberration in the behavior of our foremost adversary". Moreover, as LTG (retired) William E. Odom has written in Foreign Affairs, (Winter 1988/89) "It would be a grave error for the new administration to relax all the competitive pressures the Soviet Union feels from the sustained U.S. military buildup and from U.S. assertiveness in regional conflicts". Accordingly, we must commit to a stable land force modernization program that fields, within the Soviets fielding cycle, enhanced warfighting capabilities in those units we expect to be the first to fight.

While the challenges to Army force modernization are varied and formidable, our commitment to maintaining and Army capable of deterring and fighting war remains steadfast and determined. Accordingly we will carry out, to the best of our ability, our responsibility as stewards of the resources made available to us and our responsibility to ensure the warfighting capability of our land force.

I am thankful to the four oversight Committees, and in fact the entire Congress, for the support which has been provided to our modernization program over the past decade. This year our budget request contains the funds which we consider essential to redressing our insufficiencies and executing the strategy as just described and the programs which General Pihl will discuss in his testimony which immediately follows. I ask your support in sustaining this level of funding.

STATEMENT OF LT. GEN. DONALD S. PIHL

General PIHL. Sir, General Shoffner covered the Army's heavy, special operating forces and light forces. To modernize them with a focus on the heavy force, the Army had two real choices: To continue a 15-year modernization process where we start with the border cavalry regiments forward deployed in Germany and finish all the way through the reserve components and/or to break up our forces into three parts.

The Army is responsible for delivering 10 divisions to Europe within 10 days. We have four of them forward deployed. We have another six who go over on sealift and airlift. We have decided to modernize our force every 5 to 6 years, meaning that our first force package, the M-10 plus 10 force will always have the most modern item of equipment that the Army can provide.

We will then take the equipment withdrawn from them, refurbish it in a depot system, and then issue it to the 10 to 30 day force, and then the third package, the 30-day to the end of the war force.

Now, there are some operations and support cost increases to do it this way. But, on the other hand, every 5 to 6 years we will put a modern system into the hands of the troops. Next chart.

ARMY FORCE MODERNIZATION APPROACH

Support warfighting requirements.
Focused, harnessed, stable tech base.
Level funding—no bow wave.
Develop functional modernization plans.
Retain system of systems.
Modernize by force package.
Control age of fleet.
Control operating expense.

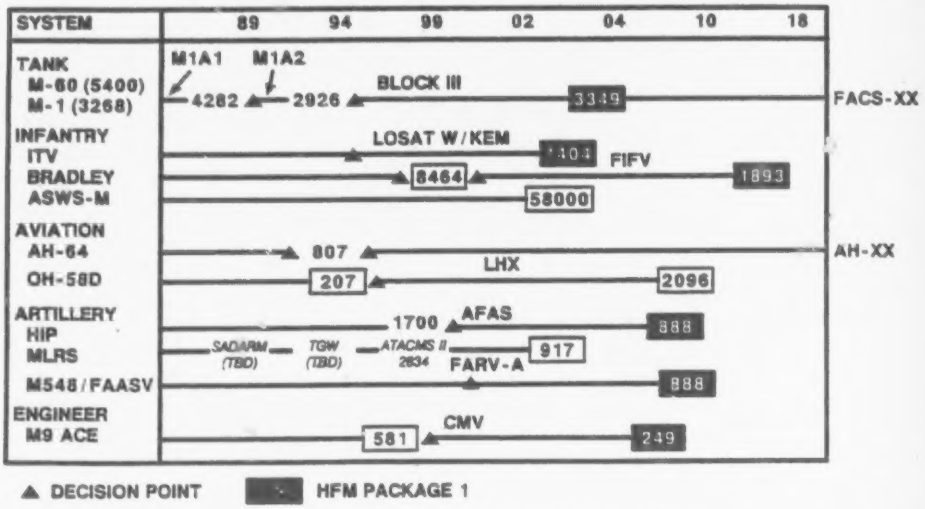
We have focused our force modernization into a series of force mod plans. We started about 2 years ago with the aviation modernization plan and have now followed in all of the functional areas in the Army.

In my briefing are the charts that I am going to show you next which is a pictorial, a feature of our modernization plans. I will not dwell on them, but I will touch the highlights of each.

Essentially, we will retain a system of systems. We will control the aging of the fleet forcing retirement of our older systems. For example, in the aviation modernization plan, we are reducing the fleet by 2,000 helicopters over time, and we will control the operating expenses in a level funded arena recognizing the declining budgets do not afford us the opportunity of having a procurement bow wave.

The first of our mod plans in importance is the armor/antiarmor plan, given the significance of the reality of reactive armor appearing on the future Soviet tanks.

ARMOR / ANTI-ARMOR



While this is a busy chart, sir, essentially what it does is starting at the top with a tank and going to the bottom with our engineer vehicle over time, it explains how our heavy forces modernization plan is to solve the armor/antiarmor issue.

For the M-1 tank, the centerpiece, we will continue to build the M-1A1 until 1992 where we plan to cut in the preplanned product improvement for the block II tank. We will build about 3,000 block II tanks.

The essential difference between block II and the M-1A1, while it retains the 120-111millimeter gun, we put a commander's independent thermal viewer system on top of it so that the commander can function separate from the tank gunner and, therefore, we can double the rate of kills by which that tank performs on the battlefield. The tank commander will be hunting in one sector of the battlefield. The gunner will be killing in another sector of the battlefield.

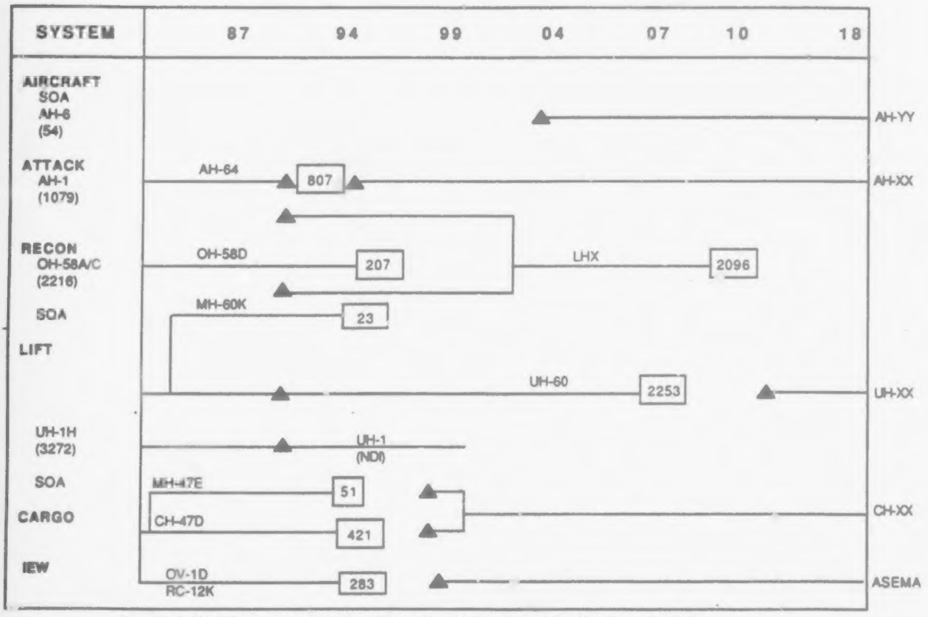
The Bradley fighting vehicle continues on out to about 8,400 vehicles. In aviation the Apache is procured through 1991. In artillery, the howitzer improvement program continues, and in the engineer area, we have the M-9 armored combat earth mover.

Shown in the dark boxes are the heavy force modernization plan which include the block III tank, the follow-on to the Bradley fighting vehicle, the LOSAT or line-of-sight antitank system which replaces our improved TOW vehicle, the AFAS or the future howitzer, the future armored resupply vehicle, and finally the combat mobility vehicle by 1997, with line-of-sight antitank and the block III tank being the lead vehicles in our heavy force mod plan.

We plan to build four heavy chassis, heavy protection level vehicles. That is the tank infantry, artillery, and engineer vehicles, and two medium chassis, medium protection level vehicles: The line of sight antitank and the resupply vehicle. This is a very ambitious plan. It will require us to operate in a not-business-as-usual sense in that we are going to have to build 1,000 chassis a year to modernize one of our heavy divisions, and what we will do is mix and match the mission modules; so that we can gear up for one production run but change the module—tank, infantry, artillery, and engineer—in terms of what the vehicle line produces.

Next chart.

AVIATION



▲ DECISION POINT: MULTI STAGE IMPROVEMENT PROGRAM (MSIP) OR NEW AIRCRAFT

In aviation, sir, our first modernization plan up until we sent the revised budget over here, we were continuing production on all of our production helicopters while building the light helicopter experimental [LHX]. We have had to modify the budget. We have canceled the armed AHIP program, the OH58D, and we have truncated the Apache program stopping production in fiscal year 1991 at 807 aircraft.

The recent events over the weekend with the natural disaster we just suffered at Fort Hood, TX, where we have had up to 200 aircraft damaged on the ground will be a major adjustment to our aviation modernization plan.

Senator JOHNSTON. Did I hear there was something like a billion dollars' worth of damage?

General PIHL. Yes; that is potentially the bill. Chief of Staff General Vuono was there yesterday with General Ross, also some Members of Congress, I believe. Mr. Murtha went to inspect the damage firsthand. We had a storm where the winds were up to over 85 knots, an act of nature. The storm hit the main post at Fort Hood and essentially walked right through the Apache Training Brigade, so we know there are 96 severely damaged Apaches on the ground at Fort Hood, TX, and we are going to have to cope with that reality and see what it does in adjusting our aviation plan.

Senator STEVENS. You say 85?

General PIHL. Yes, sir; it literally ripped the tie-downs. The aircraft were tied down. There was warning, and they took appropriate procedures for what would have been the routine bad weather that is down in that area. But we guesstimate this was a very severe storm.

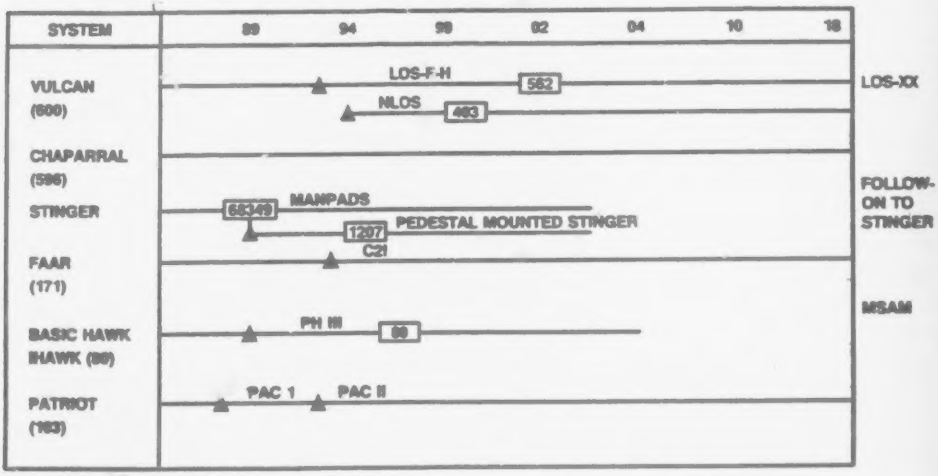
Dutch, I do not know if you want to add to that.

General SHOFFNER. The anemometer broke at 85 knots. I think the forecast was something 35-50 knots. Aircraft with 10,000 pound tie-downs. Hooks were opened up, stripped out.

We are in the process now of assessing the damage to get a better estimate of this, Senator, and we will have that over time. But it is an impact.

We have units that were being trained down there for deployment to Europe as well as some National Guard units, and we are assessing the impact of that at this time. There will be some delay.

AIR DEFENSE

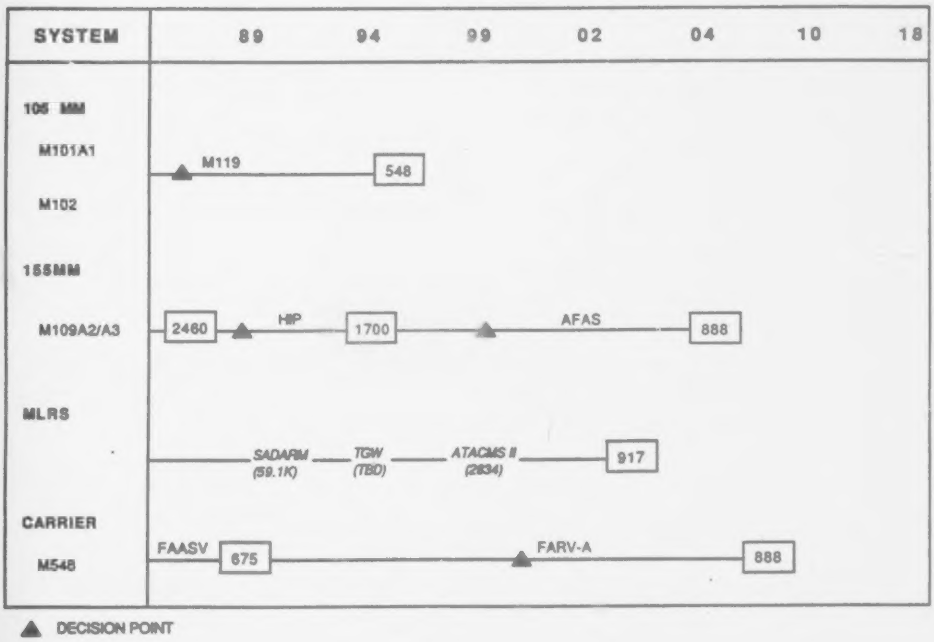


▲ DECISION POINT

In our air defense modernization plan, we continue the five-part Forward Area Air Defense Program that we have had in our budget request now for over the past 3 years. Line-of-sight—forward—heavy, the ADATS system out to 562 vehicles; the non-line-of-sight; pedestal mounted Stinger; the combined arms where we put a sight on the Bradley and a new round for our tank cannon; and then finally the thing that pulls it all together, the forward area air defense command and control system.

Next slide, please.

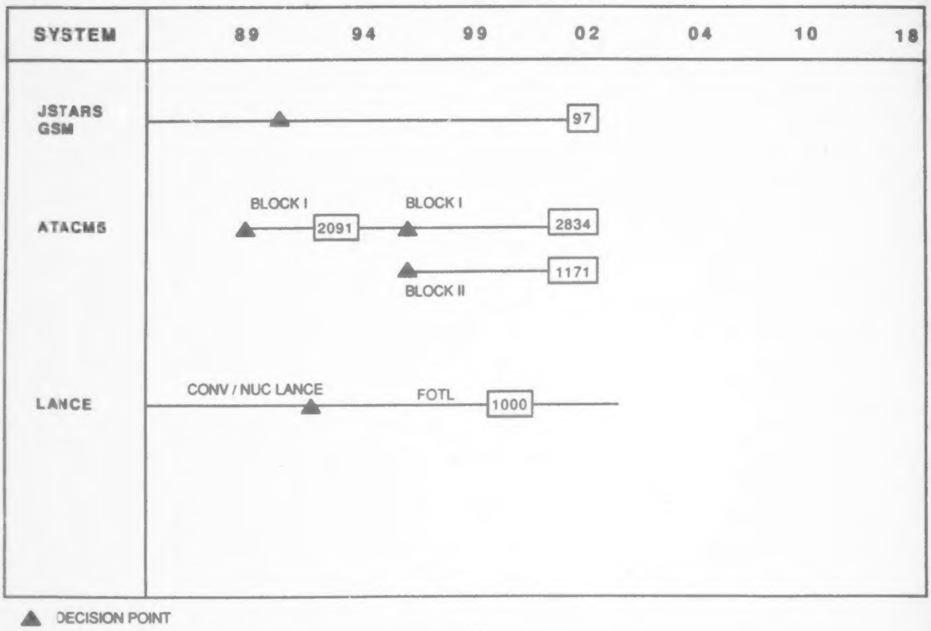
FIRE SUPPORT



In the area of fire support with a major assist from the Defense Science Board we are looking at the continuance of the MLRS which is the centerpiece of our artillery program. We are looking at the munitions that go in the MLRS SADARM terminally guided weapon and eventually the ATACMS system of weapons which will fire off an MLRS launcher.

We are going to continue the extension of the howitzer improvement program. We will bring in the light howitzer for our light divisions and finally we are looking at an armored resupply vehicle as a part of our heavy force mod plan.

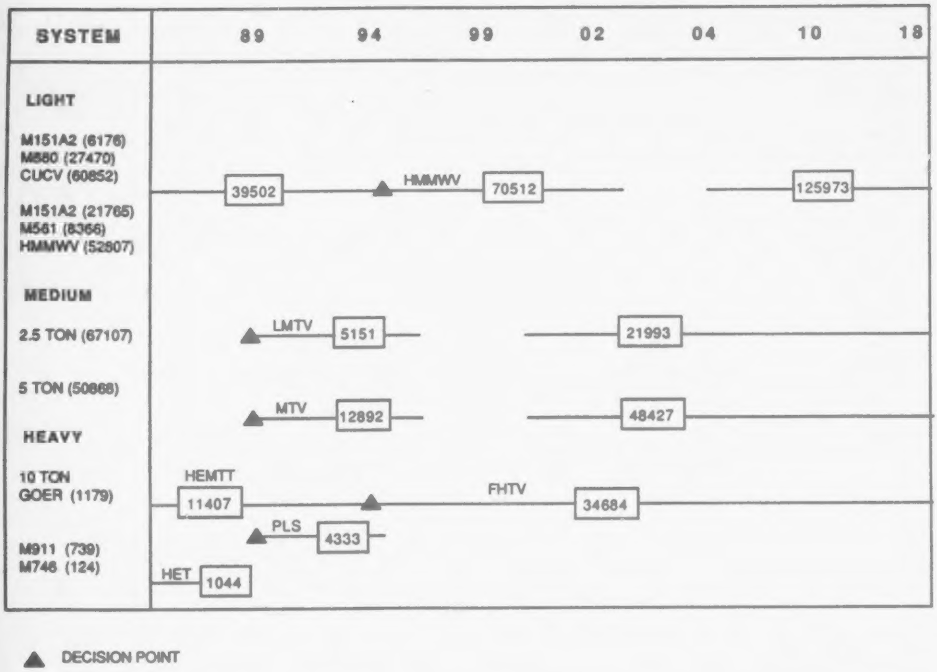
DEEP ATTACK



In the Army's deep attack program we are still working on three programs: Joint STARS with the Air Force—that is our moving target indicator radar on the Boeing 707; the ATACMS program, a long-range missile system launched off the MLRS; and then we are also looking at the modernization of our nuclear, short-range nuclear forces with the follow-on to Lance [FOTL].

Right now the APAM warhead—antipersonnel antimaterial—is on the front end of an ATACMS weapon system. Eventually the Army looks forward to a smart munitions system that will be able to kill tanks from ATACMS.

TACTICAL WHEELED VEHICLES



General PIHL. In tactical wheeled vehicles our supporting base, this is a switch year for the Army or an off year because we are testing the family of medium tactical vehicles and a palletized loading system. We have the high mobility multipurpose wheeled vehicle in our budget as far as procurement is concerned. Finally, all of these modernization plans are underpinned.

ARMY TECNOLOGY BASE MASTER PLAN (ATBMP) OBJECTIVES

Provide top down guidance to the Army technology base community.

Enhance the leveraging of other service, industry, and academia investment.

Be responsive to DA OSD, and congressional guidance/interests.

Focus materiel developer technology base investment—relevant and resourced at critical mass.

Significantly improve technology base stability.

Achieve more support for the technology base investment through an improved understanding of our investment strategy and plans.

General PIHL. By our technology base and R&D and as we adjust it from the President Reagan to the President Bush budget, the Army protected its R&D accounts and its technology base, and we think by focusing technology we will retain that qualitative edge that we need to as far as our force modernization is concerned.

Sir, I look forward to questions. I will be followed by the Marine Corps.

[The statement follows:]

STATEMENT OF LT. GEN. DONALD S. PIHL

Good morning Mr. Chairman and members of the committee. It is a privilege for me to appear before this committee with my distinguished colleagues to discuss land warfare. MG Shoffner has already discussed the threat, our doctrine and our requirements process: my focus will be a corporate overview of our force modernization strategy and a review of some of our major systems.

THE ARMY - A STRATEGIC FORCE

✓ **CENTERPIECE OF CONVENTIONAL DEFENSE**
- ➡ DETER WITH THE MAN ON THE GROUND FORWARD
- ➡ RAPID DEPLOYMENT TO CRISES AREAS
- ➡ DETER -- RESPOND -- REINFORCE -- FIGHT -- WIN
- ➡ BUILT ON 5 CORPS:
  - 18 ACTIVE DIVISIONS
  - 10 NATIONAL GUARD DIVISIONS
  - ARMY RESERVE UNITS

✓ **STRATEGIC ROLES, MISSIONS**
- ➡ EVER PRESENT...INCREASING
- ➡ CURRENT CAPABILITIES ARE MINIMUM ESSENTIAL

(Chart 1)

We understand our mission to be deterence. We think that our missions of deterrrence, responding, reinforcing, fighting and winning are built on our five corps with 18 active divisions, 10 National Guard divisions and Army reserve units.

ARMY LONG-RANGE PLANNING GUIDANCE

✓ **LEADERSHIP'S VISION INTO THE 21ST CENTURY**

✓ **GUIDES DECISIONS TODAY - SHAPES TOMORROW'S ARMY**
- ➡ ONE GENERATION AHEAD

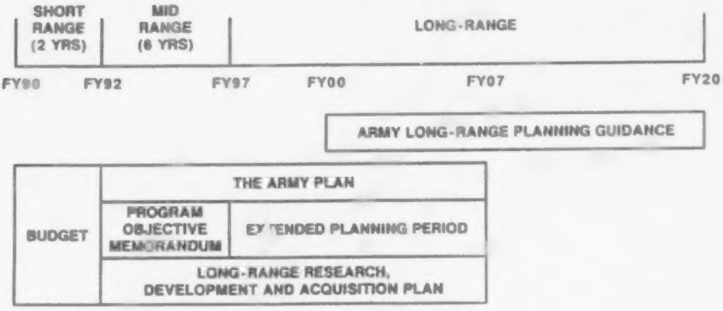
✓ **BRING LONG-RANGE CONSIDERATIONS TO BEAR ON PLANNING, PROGRAMMING & BUDGETING PROCESS**

✓ **STIMULATE DEBATE ON HOW TO ACHIEVE LONG-TERM GOALS**

(Chart 2)

We provide the regional CINCs heavy, light and special operations equipment. This chart shows the Army long-range planning guidance, reflecting our vision into the 21st century. We are bringing our long-range guidance into focus in terms of the programming, planning and budgeting process.

ARMY LONG-RANGE PLANNING GUIDANCE
PLANNING AND PROGRAMMING TIME LINES


SHORT RANGE (2 YRS)
MID RANGE (6 YRS)
LONG-RANGE
FY90
FY92
FY97
FY00
FY07
FY20
ARMY LONG-RANGE PLANNING GUIDANCE
BUDGET
THE ARMY PLAN
PROGRAM OBJECTIVE MEMORANDUM
EXTENDED PLANNING PERIOD
LONG-RANGE RESEARCH, DEVELOPMENT AND ACQUISITION PLAN

(Chart 3)

We have a debate on how to achieve our long-term goals. This chart is a pictorial of our plans. The long-range research, development and acquisition plan has been around for about 10 years. We have used it for long-range planning and we look from the technology base into systems development.

ARMY IMPERATIVES

- HIGH QUALITY SOLDIERS AND CIVILIANS
- REALISTIC, INTENSIVE TRAINING
- PROGRESSIVE LEADER DEVELOPMENT
- MODERN WARFIGHTING DOCTRINE
- MATERIEL SUPERIOR TO THREAT
- TECHNOLOGICAL SUPERIORITY
- ADEQUATE FACILITIES

(Chart 4)

This chart shows the modernization imperatives. Last year was the year of training and we trained intensively to keep our readiness edge. The better trained we are, the more deterrence we provide. We have active leadership in all components and a modern war-fighting doctrine of which we are very proud.

We are going to focus on materials superior to the threat, technological superiority and superior facilities.

ARMY MODERNIZATION STRATEGY

THREAT

✓ **SOVIET MODERNIZATION:**
  - ➡ **INCREASING**
  - ➡ **QUANTITATIVE & QUALITATIVE**
  - ➡ **COMMITTED & RESOURCED**
  - ➡ **NEW SYSTEM FIELDED EVERY 7-8 YEARS**

✓ **INCREASING SOPHISTICATION OF SOVIET SURROGATE AND THIRD WORLD THREAT**

(Chart 5)

In the conventional area Russia has not changed its intent. Their number of design bureaus, and divisions that will be facing us in the years to follow, we think, are just as formidable as today.

The Secretary General's draw down one might say is an evident plan for a leaner and more effective Soviet army and we think they are going to be tougher, not weaker.

We are looking at the reality of two new future Soviet tanks arriving 7-8 years apart from one another. This is one of the notions which prompt our block improvement program for the Abrams tank.

OUR TOP NINE EQUIPMENT REQUIREMENTS

- ANTI-ARMOR
- COUNTERFIRE
- FORWARD AREA AIR DEFENSE
- MOBILITY
- SEE DEEP
- ATTACK DEEP
- REDUCE LOGISTICS TAIL
- COMMAND AND CONTROL
- CHEMICAL DETERRENCE

IN THE BEATEN ZONE ... SURVIVABILITY OF SYSTEMS

(Chart 6)

We have identified our top nine requirements, as shown on this chart. They are not in prioritized order because we have to look at all the functions in the service. Anti-armor is however placed as the number one priority in the Army R&D program.

FORCE MODERNIZATION - THE OPTIONS

MAJOR IMPROVEMENTS ACROSS THE ENTIRE ARMY EVERY 15 YEARS

- RDTE EXPENDITURES RELATIVELY LOW
- FOCUS ON PROCUREMENT
- RELATIVELY LOW FORCE TURBULENCE
- M+10 FORCE PROBABLY OBSOLETE WHILE FIELDING FINAL FORCE PACKAGE

IMPLICATIONS

BLOCK IMPROVE AND FIELD TO PORTION OF FORCE EVERY 5-6 YEARS

- RDTE EXPENSES INCREASE TO SUPPORT CONCURRENT TECH BASE AND FSED EFFORTS
- PROCUREMENT QUANTITIES REDUCED TO PAY RDTE BILL
- HIGHER FORCE TURBULENCE
- M+10 FORCE ALWAYS FAVORABLY MATCHED TO SOV COUNTERPART FROM QUAL. PERSPECTIVE

(Chart 7)

We have two force modernization options. This is a policy decision that the Department has taken in the past year. In this chart you see that we could modernize sequentially through the force every 15 years. That means between when the first new tank arrived and the last of that new tank arrived to the Reserve Components in the D + 30 force. 15 years would have been taken in order to get those tanks into the inventory. We have made a conscious policy decision not to do that. One of the force modernization principles we have adopted is the overriding need for continuous modernization of the "first to fight" units at a rate competitive with expected Soviet modernization. In sum, we must modernize Force Package I at a 5 to 6 year pace to counter the Soviet's complete modernization of their strategic echelon, which occurs at a 7-year pace; thus, our plans maintain the qualitative edge in our "first to fight" units. By then using displaced equipment to subsequently upgrade Force Packages II and III, we continually modernize our total force inside the Soviets' modernization cycle. This warfighting imperative demands a well focused technology base which provides technology packages ready for system development every 5 to 6 years. Concurrently, this approach requires full scale engineering development (FSED) of a new or block improved system so that it is ready to be fielded at the same frequency. Finally, the strategy requires a constant, or level, quantity of procurement funding so as to buy-out quantities needed to equip top priority units every 5 to 6 years.

While there are higher support costs required when you process a fleet of tanks three times in order to hand it off to the forces who arrive later in the deployment cycle, we want to be sure tank survivability and lethality against the Soviets is an absolute priority for the United States Army.

ARMY FORCE MODERNIZATION APPROACH

- ➡ SUPPORT WARFIGHTING REQUIREMENTS
- ➡ FOCUSED, HARNESSED, STABLE TECH BASE
- ➡ LEVEL FUNDING ... NO BOW WAVE
- ➡ DEVELOP FUNCTIONAL MODERNIZATION PLANS
- ➡ RETAIN SYSTEM OF SYSTEMS
- ➡ MODERNIZE BY FORCE PACKAGE
- ➡ CONTROL AGE OF FLEET
- ➡ CONTROL OPERATING EXPENSE

(Chart 8)

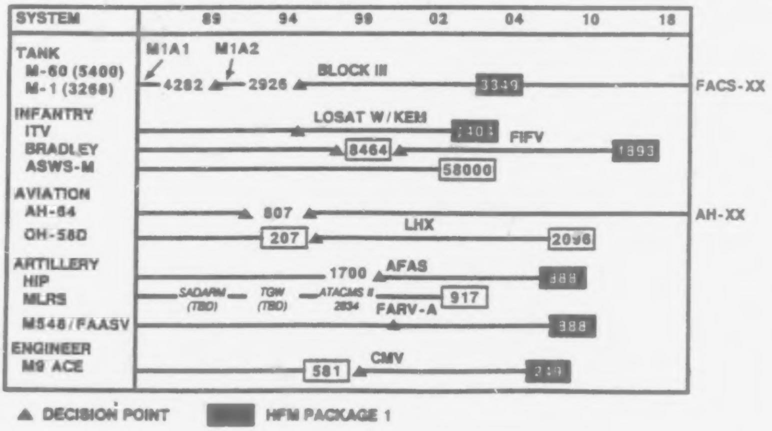
Our approach to modernization is shown on this chart. We have taken a level funding approach to our family of modernization plans. We want to retain a system of systems as a concept so that we are building a family of vehicles or a family of weapons systems around a centerpiece and carry those through as a package.

I previously mentioned modernizing by force packages. That is our M + 10 force, the 10 divisions we must have deployed to Germany in 10 days; followed by the 10 to 30 day force and third, the 30 day to end of war force.

We have also taken on retiring our aging fleet. We have the Army Aviation Modernization Plan where we reduce the helicopter fleet from 8,600 to 6,600 to keep our inventory current.

I would now like to take a few minutes to review some of the major systems we are developing and fielding. I have provided charts, which are pictorials of our modernization plans, on armor antiarmor, aviation, air defense, fire support, deep attack, tactical wheeled vehicles and the technology base. The numbers reflect our adjustments contained in President Bush's Amended Budget Submission. I will discuss each of these in turn beginning with the armor antiarmor chart, which captures many of our major systems from several functional areas.

ARMOR / ANTI-ARMOR



(Chart 9)

Armor Antiarmor is the title we have given the process to catch-up, achieve overmatch, and eventually stay ahead of Soviet armor antiarmor developments. In support of this process the Army has developed a family of modernization plans, five of which are directly related to Armor Antiarmor. First, there is the A3 Modernization Plan which is a functionally oriented plan to improve warfighting capability for the total Army in the near, mid and far term. Second is the plan to modernize our heavy forces. Third is the Aviation Modernization Plan which addresses helicopter antiarmor capability. Fourth is the Fire Support Modernization Plan which addresses all artillery systems and missions, to include counterfire which was a major concern of the 1988 Defense Science Board Summer Study on countering Soviet fire support systems. And finally the Tech Base Master Plan which focuses technology on the Armor Antiarmor issue.

Let me now address some of the specific actions we have taken and those we plan to take on some of our major systems. First and foremost we have, despite enormous pressure for budget reductions, successfully sustained our budget committment to A3 associated RDA in the $4.5 to $5.0 billion a year range.

The predominant weapons of the antiarmor battle are the tank, the infantry fighting vehicle and the attack helicopter. We have increased the procurement goal for each of these tank killing systems. We will continue to procure the M1 Abrams tank well beyond the original quantities we had sought (in excess of 9000 vice the previously planned quantity of approximately 7000); the M2 Bradley Infantry Fighting Vehicle and the M3 Cavalry Fighting Vehicle will also continue in production. And the AH64 Apache Helicopter will remain in production through 1991 resulting in a total production quantity of 807; while this is fewer than we had hoped to procure prior to the budget reductions, it is still well above the original procurement goal of 675.

Second, we are improving the lethality of the kinetic energy tank bullets and the chemical energy missiles, both TOW on Bradley and Hellfire on Apache. For the M1 tank with the 120mm smooth bore gun we have deployed the M829 round with a depleted uranium long rod penetrator which improves kill performance. Soviet reactive armor, which is designed to protect against chemical energy missiles, offers only its mass as protection against kinetic energy bullets. This means that the explosive in a reactive armor box, while effective against unitary missile warheads in older TOW and Hellfire, will not stop our best tank bullets.

For our chemical energy missiles we have a range of ongoing aggressive activities. TOW 2A is a switch to tandem warheads. The precursor charge causes the reactive armor to explode without harming the main warhead chemical energy "jet" formation. The jet, once formed, proceeds through the area behind the reactive armor box and defeats the target. Also for TOW, we are developing TOW 2B which is a top attack weapon that will avoid the thicker frontal aspects of the target. For Hellfire we are installing a precursor charge like TOW 2A in order to spoof the reactive armor into firing while the Hellfire "jet" defeats the target tank.

On the survivability side of the equation, we have deployed the M1 with heavy armor and are pursuing product improvements to Bradley survivability which are an outgrowth from live fire testing.

The future key to modernizing the heavy forces is the preplanned product improvements to the Abrams tank called Block II. The Block II tank improvements (M1A2) increase the warfighting capability of the tank by freeing the commander to hunt for targets independent from the gunner. The crew will perform this "hunter-killer" function utilizing the improved commander's weapon station and the commander's independent thermal viewer. The rate at which the Abrams Block II will find and kill targets is increased because the current fire control computation devices are replaced by a modern high speed data bus (1553) with signal processing, data display screens and electronic control units that rapidly compare and show the fire control solution to the commander and gunner. The full vehicle data base is redundantly stored in the hull and turret of the tank as a means to increase protection from live fire. The Block II improvements also change the rangefinder technology. We will introduce a rangefinder that is on par with the forward looking infrared (FLIR) sight at the gunner's and commander's position. If we can see the target, we will be able to range to it. Finally, Block II improves survivability by increasing armor protection and by rewiring the tank to reduce its vulnerability to live fire.

The tank that follows Abrams Block II can be either a third block of improvements to the M1 or a new tank. In either case the improvements to the tank envisioned are a new gun, countermeasure technologies, autoloader, advanced power pack, improved track and suspension, weight reduction (from 70 tons to a 55 ton goal) and introduction of modular armor to improve survivability.

The Kinetic Energy Missile on a Bradley chassis is the Line of Sight Antitank or LOSAT dedicated antitank weapon. It will replace the Improved TOW vehicle which is a M113 carrier with a TOW pod that preceded Bradley and is still in the dedicated antitank companies of the heavy force.

For the near term, the Army will continue to produce the survivability upgraded Bradley with product improved TOW 2A and TOW 2B. This is essential to maintain the kinetic energy and chemical energy mix of tank killing systems in the heavy force and to close the fielding gap between the Abrams and Bradley. Ultimately we will follow the Bradley with the Future Infantry Fighting Vehicle (FIFV). Before describes an end to Bradley or a new system that doesn't have a TOW replacement on board, etc., it is important to state that the FIFV won't progress until the operational and organizational concept is a natural fit to our Airland Battle doctrine. A wide range of alternatives is possible for an FIFV. The reason we have included it in Package 1 of our Heavy Force Modernization Plan is obvious, to utilize the common heavy chassis and field a future infantry vehicle that can fight with the Block III tank.

While these current adjustments to our tank, infantry, and aviation capabilities are ongoing, we are also continuing to develop a key system for the light forces and dismounted soldiers.

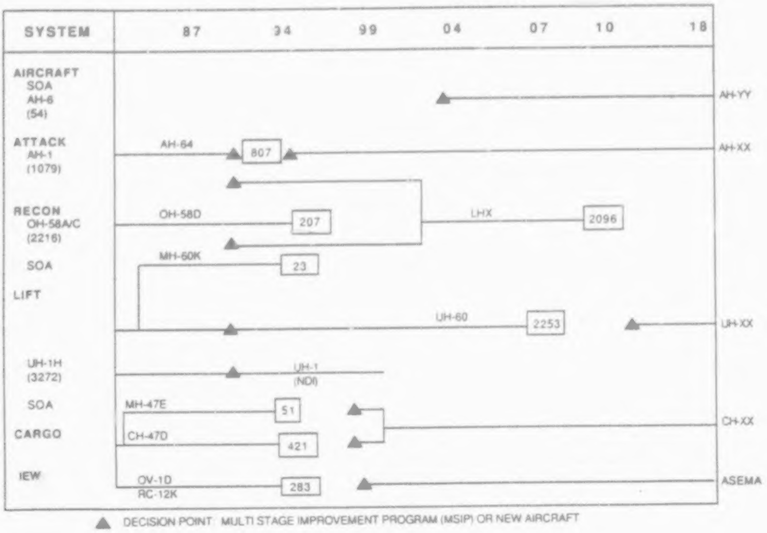
The Antiarmor Weapon System-Medium (AAWS-M) is a key force multiplier. AAWS-M is the missile which replaces the outdated DRAGON and will kill a modern tank by employing a top attack kill mechanism. At less than 45 pounds, this single-man employable system is invaluable to our light forces and will also be used to thicken the heavy forces since it will be with Bradley crews for use in built-up areas, woods, and close terrain. The AAWS-M is capable of launch from an enclosure and will solve the Army's requirement for military operations in urban terrain (MOUT). We have selected a system using fire and forget technology and will move into full scale engineering development this year. This system, when deployed, will give our infantrymen a level of both lethality and survivability never before enjoyed by any dismounted soldier engaged in an anti-tank role.

I will reserve further comments on the aviation and artillery systems until I dicuss those functional area.

The M9 Armored Combat Earthmover (ACE) is a highly mobile, armored earthmoving vehicle that can dig, doze, haul and scrape. It is fast enough to keep pace with modern tanks on the battlefield and offers the operator protection from small arms fire, artillery fragmentation and NBC agents. This system will be followed by another member of our Heavy Force Modernization Package I, the Combat Mobility Vehicle (CMV). In order for the Block III tank to preserve and exploit its offensive capability, the combat commander requires a true counter-obstacle vehicle. The primary task of the CMV will be to defeat complex obstacle systems. The CMV will also be performing a variety of additional tasks such as creating combat roads and trails, digging survivability positions and creating antitank ditches. The CMV will be required to operate in the same lethal environment as the tank and the Future Infantry Fighting Vehicle.

Let me now briefly address the other functional areas I mentioned earlier.

AVIATION



(Chart 10)

The Army Aviation Modernization Plan encompasses the entire RDTE and Procurement aviation mission area to include all aircraft, their associated systems and repair parts. One of the major premises in developing this plan has been that funding will continue to be constrained so that older aircraft need to be retired with a concurrent force structure reduction.

Specifically, the Army Aviation Modernization Plan will: (1) continue the production of the AH-64 Apache, through 1991, for a total of 807 aircraft and the UH-60 Blackhawk for a total of 2253: (2) complete the modification of the CH-47D Chinook: (3) procure MH-60K Special Operations Aircraft: (4) provide for minimum safety and mission essential modifications for the AH-64 and UH-60: (5) develop the new vitally needed Scout/Light Attack helicopter (LHX): (6) retire aging helicopters and: (7) fund those programs necessary to support and sustain all aviation programs.

A major objective in balancing the six major aircraft category capabilities in the AAMP - attack, reconnaissance, lift, cargo, intelligence and electronic warfare, and special operations aviation - is to ensure that every weapon system procured achieves its full potential in combat. The synergy achieved by an aviation force fully integrated with the other members of the combined arms team is readily apparent in the capacity of attack helicopters to rapidly concentrate combat power.

A quick-reacting attack helicopter fleet can disrupt and destroy moving armored columns and other high value targets wherever an enemy is attacking. The AH-64 Apache has been designed to provide this capability as a principal anti-armor weapon.

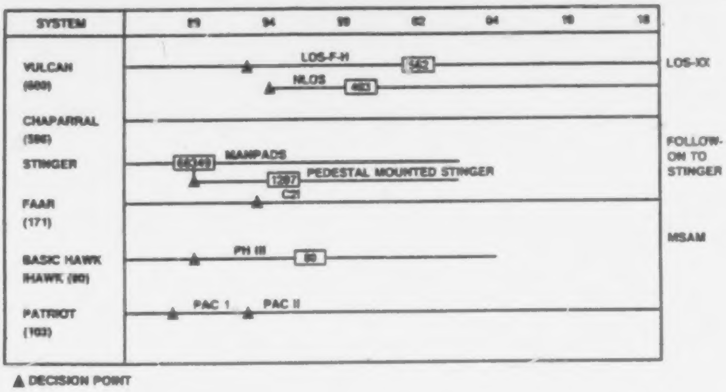
The Apache is highly mobile and capable of providing direct and indirect aerial fire during day, night, and limited visibility operations. The main armament of the Apache is the highly lethal and accurate Hellfire missile. Various combinations of Hellfire, Hydra-70 rockets, and 30MM ammunition may be employed depending upon mission requirements. As of January 1989, 437 Apaches have been delivered and 402 fielded. FY90 R&D money continues the Airborne Adverse Weather Weapon System (AAWWS), which is being developed to provide a fire-and-forget Hellfire anti-armor missile. This will allow the Apache to remain hidden from anti-aircraft fire shortly after firing the missile. There are 11 AH-64 Attack Battalions deployed and ready for combat including four battalions deployed to Europe.

Scout helicopters perform the vital reconnaissance mission as well as intelligence, surveillance and target acquisition and designation. The Army Helicopter Improvement Program (AHIP), or OH-58D, gives the Army a scout helicopter employing a thermal imaging system, laser range finder/designator and high power television incorporated into a mast mounted sight that provides superior detectability and survivability. Operating day or night under hot and adverse weather conditions, AHIP provides command and control, target acquisition and target designation. Due to affordability, AHIP is not included in the amended budget. The program stops at 207 of the 375 required.

LHX is the centerpiece of Army Aviation and the Army's number one priority system in research and development. It is absolutely critical to the future of the Army, particularly when one considers its role as a force multiplier and as an antiarmor system. LHX will replace the AH-1, OH-6, and OH-58 light helicopter fleet and complement the AH-64. The light fleet is approaching obsolescence and will be unable to meet the growing Soviet threat of the mid-1990's and beyond. Missions of LHX include armed reconnaissance and light attack with an inherent air-to-air capability. The LHX will provide a highly reliable, easily maintained weapons system with the lethality and survivability necessary for deployment on the battlefield of the future. LHX will have enhanced combat capability through the use of advanced technologies in the Mission Equipment Package (MEP), airframe and engines. Enhancements in target acquisition, night pilotage and navigation systems expand the warfighting capability of Army aviation into the hours of darkness and adverse weather.

LHX is a key conventional force initiative that will enhance the conventional warfighting capability of the Army while remaining within constrained force structure and funding projections.

AIR DEFENSE



(Chart 11)

The Army has the world's best tank and the world's best fighting vehicle in the forward area. However, they are currently being defended from the air threat by a 1968 vintage air defense gun. Recognizing that the multiple air threat to the forward area cannot be countered with a single weapon system, the Secretary of Defense approved the Forward Area Air Defense System (FAADS) concept on 8 January 1986. FAADS is a "system of systems" comprised of Line-of-Sight Forward Heavy, Non-Line-of-Sight, Line-of-Sight Rear, Combined Arms Initiatives, and Command, Control and Intelligence.

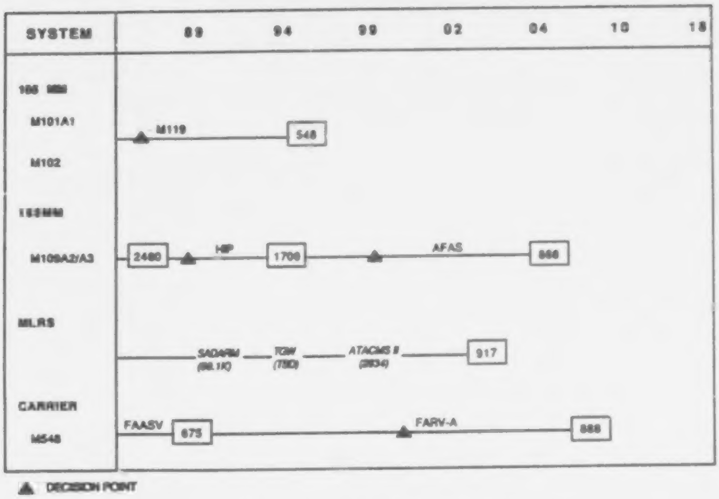
Line-of-Sight Forward Heavy (LOS-F-H) maneuvers with the combined arms team. It uses laser beam guided missiles mounted on a Bradley chassis to provide defense against helicopters, fixed wing and other aircraft that are in line of sight. The LOS-F-H has been slowed somewhat to ensure critical tests can be performed to ensure the DIVAD experience is not repeated.

Non-Line-of-Sight provides the unique capability of engaging helicopters and armor that are masked by terrain or are beyond the range of line of sight systems. The key system feature is a fiber optic cable which allows the gunner to guide the missile and view what the missile seeker sees as it flies to the target.

Line-of-Sight Rear uses the proven Stinger missile pedestal mounted on a HMMWV to engage fixed wing aircraft that are attacking our logistics points and command points in the rear of the forward area or are transiting to the rear.

The Combined Arms Initiative provides "self-help" air defense for helicopters, tanks, and the Bradley. Air-to-Air Stinger is being incorporated on helicopters, tank ammo is being enhanced for air defense application and the Bradley reticule sight is being improved to enhance air defense capability. Each of these FAAD component systems will be very effective on an individual basis and will serve to complement each other. However, the "glue" that holds the FAAD system together is the Command, Control and Intelligence component. This component is made up of a series of ground and aerial sensors and communication equipment that serve to pull FAADS together into truly a "system of systems". With the fielding of FAADS, our ground forces will be defended from the air threat by the world's best air defense system.

FIRE SUPPORT



(Chart 12)

The 1988 Defense Science Board (DSB) Study on Countering Soviet Fire Support Systems concluded that systems designed to counter Soviet fire support must be fielded much more rapidly, and in significantly greater quantity, if friendly forces are to survive the initial preparation fires of a Warsaw Pact attack.

Our Fire Support Master Plan is consistent with the recommendations of the DSB and addresses cannon, rocket and missile systems used to perform three principle missions: close support for maneuver units; counterfire against threat indirect fire systems; and deep fires against high value targets. The modernization trend in this functional area is toward individual weapon systems operating autonomously with position/navigation systems and on-board fire control; smart munitions permitting lethal attack of point targets; and significantly improved target acquisition, command and control, and logistical support.

The Army's new lightweight 105mm howitzer, the M119, is scheduled for initial fielding in December 1989. The M119 will add needed firepower and improved range and reliability to rapidly deployable light infantry, airborne and air assault light divisions.

In the close support role the M109 Self-Propelled Howitzer provides the primary indirect fire support to the maneuver brigades of armored and mechanized infantry divisions. When fielded in FY91, the M109 Howitzer Improvement Program (HIP) will have the capability of autonomous operations with its on-board fire control system and positioning/navigation system, with significantly improved survivability, responsiveness and reliability.

To enhance this system's counterfire capability two new munitions are being developed. First, the Sense and Destroy Armor (SADARM) is a relatively low cost sensing munition designed to detect and destroy lightly armored vehicles, primarily self-propelled artillery. After launch the submunition is dispensed over the target area and searches for stationary or slow moving armored vehicles using a combination millimeter wave/infrared, dual mode sensor. Once a target is detected, SADARM fires an explosively formed penetrator which, traveling at an extremely high velocity, perforates the top of the target. SADARM is also being developed for the MLRS.

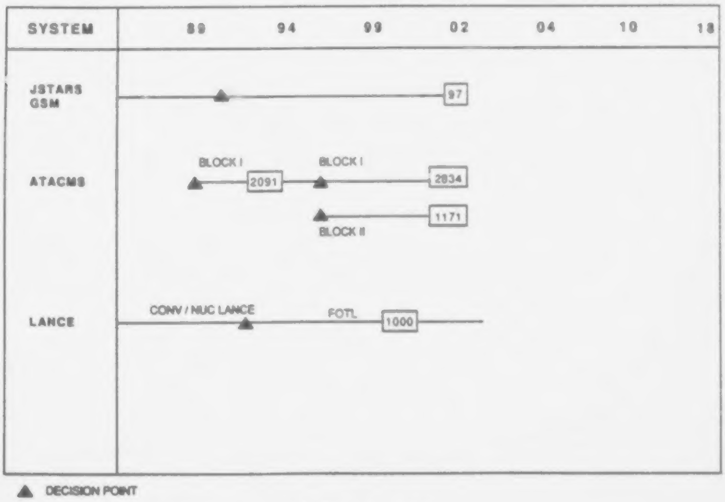
Second, the 155mm Autonomous Precision Guided Munition (APGM) is a NATO cooperative development program, for which the U.S. has been assigned lead nation responsibility, to develop an anti-armor, fire-and-forget artillery projectile to be fielded in the mid to late 1990's. Eight NATO nations have committed their combined resources to this effort.

While the Army continues to improve the M109 self-propelled howitzer under the Howitzer Improvement Program (HIP) and continues to field the Multiple Launch Rocket System (MLRS) with newer rounds coming, such as Search and Destroy Armor (SADARM) and Terminally Guided Weapons (TGW), the need for a modern howitzer replacement is self-evident. The AFAS will apply advanced projectile propulsion, either liquid propellant or unicharge. Also envisioned are automated ammo handling and firing, advanced fire control/battle management, signature reduction technologies and increased protection. These will be demonstrated in an Advanced Technology Transition Demonstrator (ATTD) in order to achieve greater range, greater survivability, reduced crew, increased on board ammo supply, autonomous operations, and 3-4 times the rate of fire over the HIP.

The Multiple Launch Rocket System (MLRS) is a system of multiple fire, free flight rockets with Dual Purpose Improved Conventional Munitions (DPICM) warheads. MLRS supplements cannon artillery fires by delivering large volumes of firepower in a short time against critical, time-sensitive targets. System growth is planned by adding a Terminal Guidance Warhead (TGW), a chemical warhead, Sense and Destroy Armor (SADARM) and Army Tactical Missile System (ATACMS), which I will address later.

Finally, the Future Armored Resupply Vehicle (FARV) is the ammunition resupply vehicle to replace the FAASV. It will be complementary to the AFAS. There will be one FARV-A for each AFAS and the fielding of the two systems will be simultaneous. The FARV-A will provide automatic rearm capability for the AFAS negating the requirement for the crew to dismount during reload operations. This concept will allow for rapid rearm, will be less manpower intensive, and will increase the survivability of the Army's future direct support artillery system.

DEEP ATTACK



(Chart 13)

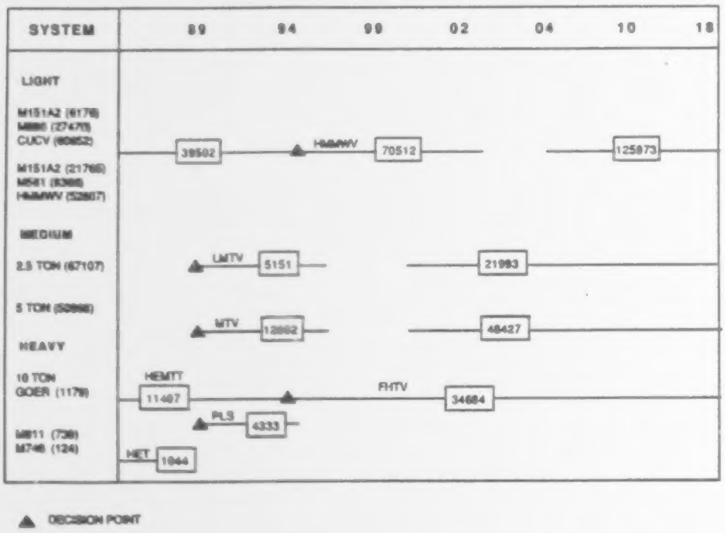
Currently our forces do not have the full capabilities necessary to execute deep operations to the extent envisioned by our Airland Battle doctrine. Joint programs with the Air Force provide for many of the deep operations requirements, and we are also developing capabilities on our own to better execute deep operations.

The Army and Air Force are developing the Joint Surveillance Target Attack Radar System (JSTARS) which will enable commanders to see more than 100 kilometers deep into the enemy's force array. JSTARS is a battle management and target attack control system that will detect, track and assist in attacking moving and fixed tank-sized targets. The Army is developing the Ground Station Module while the Air Force provides the airborne platform, radar and data links.

As mentioned earlier, ATACMS is a conventional semi-ballistic missile that will be fired from the existing MLRS launcher; each launcher will carry two ATACMS missiles, each with 1000 Antipersonnel Antimateriel (APAM) bomblets. It is designed to engage high priority land targets at ranges beyond the capability of cannons, rockets and the Lance missile system. Its mission is to interdict, delay, disrupt and destroy the second echelon assault forces, command and control elements, and logistic support units.

In the non-strategic nuclear arena the Follow-on to Lance (FOTL) is a replacement for the aging Lance missile system. FOTL will meet the corps and theater commander's requirements for delivery of nuclear fires against high priority targets. Research and development funds in FY90 and 91 will initiate a Full Scale Engineering Development contract.

TACTICAL WHEELED VEHICLES



(Chart 14)

Combat Service Support includes some of the least visible, yet crucially important, products of the RDA effort to equip our soldiers with the equipment and systems needed to defeat the threat. These items include our tactical wheeled vehicles, which are absolutely essential.

We are continuing to procure and field the very successful High Mobility Multipurpose Wheeled Vehicle, HMMWV. This lightweight, highly mobile, diesel powered, 5/4 ton vehicle has been well received in the field and will continue to be the backbone of the light vehicle fleet for some time.

The Army already has Congressional authorization for an additional multiyear contract for more HMMWVs and we are looking into procuring additional vehicles into the 1990's.

The Army is proceeding with a new Family of Medium Tactical Vehicles (FMTV) to replace the aging 2.5 Ton vehicles and help correct existing shortfalls in the 5 Ton fleet. The FMTV will have multiple body styles and should be shorter, lighter, more fuel efficient, and more mobile with reduced ownership costs. We will capitalize on state-of-the-art truck design for the FMTV.

The Palletized Loading System (PLS) is a Non Developmental Item (NDI) truck which will feature a self load/unload capability heavy truck and companion trailer for use in the Corps Ammunition Distribution System. We expect PLS to improve ammunition transportation and handling efficiency while requiring less personnel, reduced MHE and releasing existing heavy truck assets for other essential missions.

Finally, I would like to address the Army's Tech Base Master Plan.

ARMY TECHNOLOGY BASE MASTER PLAN (ATBMP) OBJECTIVES

- **PROVIDE TOP DOWN GUIDANCE TO THE ARMY TECHNOLOGY BASE COMMUNITY**
- **ENHANCE THE LEVERAGING OF OTHER SERVICE, INDUSTRY & ACADEMIA INVESTMENT**
- **BE RESPONSIVE TO DA, OSD & CONGRESSIONAL GUIDANCE/ INTERESTS**
- **FOCUS MATERIEL DEVELOPER TECHNOLOGY BASE INVESTMENT- RELEVANT & RESOURCED AT CRITICAL MASS**
- **SIGNIFICANTLY IMPROVE TECHNOLOGY BASE STABILITY**
- **ACHIEVE MORE SUPPORT FOR THE TECHNOLOGY BASE INVESTMENT THROUGH AN IMPROVED UNDERSTANDING OF OUR INVESTMENT STRATEGY & PLANS**

(Chart 15)

The 1987 Defense Science Board (DSB) Summer Study on Technology Base Management found that DOD and industry are deficient in rapid technology transition into systems and products. It went on to say that this situation is a primary contributor to the growing crisis in military competition as Soviet weapons' system performance approaches and, in some cases, exceeds that of the U.S. and our Allies. Because we can anticipate general numerical inferiority relative to the East Block, the situation could be disastrous unless the problem is corrected or reversed by our technological advantages. We cannot, nor should we, match the Soviets weapon for weapon or dollar for dollar; however, we must achieve and maintain a credible military force capable of carrying out our worldwide missions. The greatest opportunity to accomplish this objective is to rapidly accelerate the transition of technology to existing or emerging systems. The DSB recommended careful selection and timely execution of systems and major sub-system ATTD's to build and test experimental systems in a field environment. To continue to perform materiel acquisition in the old, heel-to-toe fashion would result in the development time being extended several years and the cost being substantially higher, than by preceding FSD with an Advanced Development Phase consisting of

ATTD's. Given the emerging and growing threat and dollar constraints, we cannot afford to do "business as usual" as we go about the modernization of our vital ground combat forces.

In support of this approach we will focus our tech base to maximize efficient utilization of resources to accelerate demonstrations of critical technology. This will provide necessary information on technology maturity, integration issues and operational potential of competing technologies. Additionally, we are not going it alone; we have entered into a Memorandum of Understading with DARPA and the U.S. Marine Corps which provides for a five year joint technology program in armor antiarmor. This program's objective is to enhance the armor antiarmor technology base in the U.S., to include industry and the DOE national labs, and to provide a competitive mechanism to encourage application of that knowledge to products that advance U.S. military armor antiarmor capabilities relative to those of the Soviets. Intuitively, this is a smart thing to do. The threat seen for the remainder of the 20th century and beyond demands action today within existing technological capability.

The Soviets pursue a steady, redundant, evolutionary modernization program which improves fielded systems and produces new systems on a regular basis. In order to keep up with the threat, much less to turn inside it, we must have a dynamic modernization program of our own that continuously improves our war-fighting capabilities. We can accomplish this goal with our current modernization plans. With your help and support, we will provide our Army with what is needed for it to continue to serve as a viable deterrent and to be ready should it be called upon to protect our Nation's vital interests.

I am thankful to the four oversight Committees, and in fact the entire Congress, for the support which has been provided to our modernization program over the past decade. This year our budget request contains the funds which we consider essential to redressing our insufficiencies and executing the plans I have just described. I ask your support in sustaining this level of funding.

Gentlemen, we are ready for your questions.

SOVIET WEAPON SYSTEMS

Senator INOUYE. Before we proceed, General, since we are involved in an area that may have top secret systems, will you advise us if we are getting close to dangerous ground.

General PIHL. Yes, sir; I will.

Senator INOUYE. I think all of us agree that Mr. Gorbachev's performance in the international scene has brought about changes in attitudes not only here but elsewhere.

Yesterday, there was a historic meeting in Beijing which I think may have some effect upon the attitude of Americans here and also in NATO, but all seems to lead to the importance of those of you who are sitting here.

Up until now most discussions have revolved around the exotic systems, the nuclear systems and such, and very little discussion on what we are discussing this morning.

I am certain most of you have watched with keen interest the activities of Soviet forces in Afghanistan. How did you rate their weapons systems and the performance? I presume they sent some of their good troops there and good weapons?

General SHOFFNER. Sir, let me hit some highlights of what we saw in that, and there is substantial information that can be provided for the record if desired.

My own impression was that I was surprised at the quality of equipment that was sent to Afghanistan, and some of the latest configuration of equipment was sent, used by the Soviets as well as their surrogates, and that was across the board. So, the first impression, I think, is that the willingness to commit competent equipment, first-line equipment to those areas was demonstrated again, not unlike some of the high end aircraft that have been taken down to Central America.

A second part, I think the Soviets saw the difficulty of manning their force and keeping soldiers competent, committed, and trained during that environment. That is a significant challenge for continuous combat, which was a surprise, and I think will result in some different changes for them.

The third point I would make is that even to the very last days of their withdrawal, we saw high level participation by the Soviets with advanced weapons being used down there. That in my view was striking.

Senator INOUYE. Would you rate them to be effective?

General SHOFFNER. Yes, sir; the observations that we saw in Afghanistan coupled with other exploitation which we do on a continuing basis, I would say competent, effective equipment and competent, effective forces operating with some very specific limitations and capabilities with regard to leaders and the ability with which their soldiers performed. But the system that he has, given the input that he is using, I believe is one which for him has been effective.

We just recently sent General Taylor to observe some Soviet training exercise in Byelorussia. He was the commander of our National Training Center at Fort Irwin, and so he had a good basis for comparison. His comparison of the training of the Soviet forces was fairly rudimentary and fairly basic compared to some of the large unit training operations that we have been able to achieve at brigade level and above.

TANK PLANT CLOSURE

Senator **Inouye**. At the present time our main battle tank that is being produced and assembled in two places, in Ohio and in Michigan?

General **Pihl**. That is correct, sir.

Senator **Inouye**. The recommendation of the Department of Defense is that we close up the Detroit plant, the Warren plant, and keep the Lima, OH, plant in operation. I am certain you realize there will be a concerted effort to keep both plants open. I have no way of predicting what the outcome will be, but I can assure you that the pressure coming from Michigan is a very strong one.

I gather the argument that the Army is using is that by closing up one plant, it will meet all of your needs and at the same time save about $50 million per year, is that right?

General **Pihl**. That is correct, sir.

Senator **Inouye**. Now, what would be the additional cost if we kept both plants operational at the minimal level? I presume it is about 50 tanks per year. Is that it?

General **Pihl**. The difference in cost is that number between 516 and 576 tanks. So, we would have to add the additional 60 tanks per year to our budget request to run both plants at minimum economic rates.

Senator **Inouye**. What would be the cost?

General **Pihl**. Sir, the cost in dollars I would be happy to provide for the record, sir, and I have got it if I could look it up for just a second.

[The information follows:]

Tank Plant Cost

The additional cost to run both tank plants at the minimum sustaining rate when the current multiyear contract is complete is $94.4 million in fiscal year 1990 and $138.5 million in fiscal year 1991.

Senator **Inouye**. You presented a chart there and used the word that this is an ambitious program.

General **Pihl**. Yes, sir.

Senator **Inouye**. In presenting this ambitious program did you in your exercise determine how much and where the money will come from?

General **Pihl**. Yes, sir; we did. We took a look at the weapons and combat track vehicle appropriations over time, and they normalize somewhere between $2.5 and $3 billion a year and took a look at the vehicles we need to replace in that timeframe.

If you look out to 1997 through the year 2010, presuming that we are still in the heavy forces threat deterrence role and if deterrence fails, potential war fighting arena with the reality of the Soviet future tank II and tank III that are coming in this next decade as they are modernizing their tanks, we are trying to modernize our combined armed force that deals with that, and so we took a look at a normalized amount of money that the Army would have for heavy tracked combat vehicles, and projected that over that 10- to 15-year period of time to see if the six vehicles in what we call package one of our heavy force mod plan will fit that level of a budget.

Now, the important part we believe about our plans are we can adjust from those plans that assumed the level of money will hold up in those out years may or may not come true. But should we have to downgrade the plan as moneys become even more scarce, we can adjust from the plan we have put together.

ANTIARMOR WEAPONS SYSTEM—MEDIUM

Senator **Inouye**. I have many, many other questions, but I will ask one more before I call upon my distinguished colleague from Alaska.

In your presentation you have been insisting upon a single person operated antitank system. I gather that all other countries have two-man operated systems. Why the insistence upon single person operated systems which I gather is much, much more expensive than a two-man operated system?

General **Pihl**. Sir, in terms of the question and the way you have asked it in that order, first of all, our antiarmor weapons system medium, which is a true fire-and-forget system, we have just chosen for full-scale engineering development, we picked the Texas Instruments-Martin Marietta team.

The U.S. Marines, as General Franklin will tell you, have joined us in our pursuit of the medium antiarmor weapons system, and it calls for a 45-pound single man operable system. That is very important to our light forces where they will either have to parachute the item in or air mobile it in on the back of a helicopter and carry that weapons system to the fight where the tanks are.

We think that the number of rounds they can carry at a single man operable system are significant in a force on force relationship in terms of the outcome of the battle. We also in our heavy forces use that weapon as sort of our third weapons system when we get into close terrain cities, wooded areas, and we will bring that weapon off the back of a Bradley vehicle, and a man will carry it to where it is needed. And so man portability, how far you can carry, and then when you shoot it, its effectiveness on the target are the keys.

If we wanted to put another crew weapons system into our inventory that is more heavy than it is medium, we already have the TOW missile system in our inventory and the candidate systems that have been offered to us as interims, the French MILAN and the Swedish BILL are more like a heavy system than they are a medium system. So, we have hung onto the single man operable, 45 pounds or less requirement with a lethality required to get a sure kill of the future Soviet tank II because it is so important to the war fighting capability of our dismounted infantry forces.

Senator **Inouye**. Is your single-man system just as lethal as the MILAN system?

General **Pihl**. Sir, our AAWS–M system will be more lethal than the MILAN system when we finally get it into the inventory.

Senator **Inouye**. Thank you very much.

Senator Stevens.

RESEARCH AND DEVELOPMENT

Senator **Stevens**. Mr. Chairman, I hope we will have a chance to put all these together.

This is R&D primarily, and it seems to me that while it eliminates the bow wave, it proceeds on a fairly high expectation, do you not think, General Pihl?

General **Pihl**. Yes; I do. But, then again, sir, in the land force area we have retained that high expectation because we believe that conventional forces and the deterrence we provide are really essential to our Nation's goals.

Senator **Stevens**. I share that feeling, but I am not sure those who want to hasten to make progress in other areas are willing to pay the cost. I just wonder if that is this high level of expectations is warranted in view of the current budget scene, and that forces me to ask have you prioritized your programs in this area.

General **Pihl**. Yes, sir; we have.

Senator **Stevens**. Have those been sent to us now?

General **Pihl**. In the sense of an ordinal priority list 1 through M, sir, we have not, but we have prioritized them in terms of what we consider to be our most important programs.

WEAPON SYSTEMS PROBLEMS

Senator **Stevens**. I hope you will share those with us before we go too far because I think we would like to prevent the bow waves and the ups and downs. The tank problem bothers me considerably because of the history of that ramping up and ramping down and the cost to the system as we did that.

It seemed to me for a while that we had so many options out there that we had options for new systems, and then we had some substantial problems, and I do not want to get into areas that may be sensitive, but when we got into the DIVAD and into others that advanced field artillery tactical system, we got into problems. Do you believe it was because there were too many new systems out there at the same time?

General **Pihl**. Sir, I would say having participated in both Sergeant York and Aquila, the ones I am most familiar with, I think the third system you referenced was AFATADS, sir, our automated fire control system for the field artillery.

Sir, in almost every case on a case-by-case basis at the time, the lessons we learned from Sergeant York and Aquila are case studies unto themselves. I do not think it was because we had too many starts on our hands. We made some mistakes, obviously, in our line-of-sight forward heavy, the ADATS system to replace the Sergeant York. We have tailored that acquisition strategy quite a bit based on the lessons learned from the Sergeant York experience.

The York was a nondevelopmental item acquisition strategy. We took the venerable old M-48 tank chassis, world class F-15 radar, the 40 millimeter Bofors gun and Ford Aerospace as the integrator. That should have been a formula for success, but it was not. We were unable to integrate the weapons system, and the principal ingredient in that was software.

The Aquila and the remotely piloted vehicle, the lessons learned there were we had not gone through the sociological change for the soldiers so that they knew how to use this new force multiplying technology that they had in their hands. We blew the operational test, and the reason we did is because the soldiers came back to the same target area repeatedly, and they did not search the entire target area for the targets that were out there.

I am convinced there was an ability to fix both of those systems and recoup the investment that was made in each. But by the time the public affairs took over and both of them became kind of case studies while we were not able to save either system. The common denominator in that, Senator, is software.

FUTURE TECHNOLOGY

Senator STEVENS. Well, I may be wrong, but it seems to me if we look out into the future, we see a declining capability to recruit new people.

The next generation has a smaller number of people are going to be available for military and Government service, and unless there is a decided change of attitude in the public, we are not going to be able to pay the moneys necessary to compete with other areas of the economies to get those people. So that we ought to be prioritizing those systems that are absolutely essential and instead of having, as you say, your busy chart, we ought to have some real top priorities as to what is needed for the Army for the 21st century.

We have now leapfrogging 5-year modernization plans, and I do not argue. It is your business. But I do not argue with that, but I just wonder when we get to 2000, we are getting into the third plan when people are hard to get and money is harder to get, will we still be survivable as far as a fighting force is concerned that has to be highly mobile, highly technological and capable of being sustained for a substantial period of time. I am not sure we have got that 21st century option on that board of yours, and I would like to see it there, and I think in the final analysis it will be the Army that fights the wars and holds the lines and wins the day if we do it with the able assistance of our friends on your left.

But I am talking in the long run it will be the Army that has to have the capability and I do not see it being able to be sustained with that high level of expectation in current budget scenario. I do not have any questions. I am just making a statement. I am trying to see beyond those two 5 years and see where you are going sometime.

General PIHL. In our focused technology base, sir, the research and development we do in the laboratories as well as in industry, we believe we have the advanced technology transition demonstrators all on the books that will give us the high technology that we need to do what you say, and that is to focus that year 2000 plan.

The tech base master plan is put together, and we will be very pleased to share that with you.

Senator STEVENS. Thank you very much, Mr. Chairman.

Senator INOUYE. Senator Johnston.

RDX SOLICITATION

Senator JOHNSTON. Thank you, Mr. Chairman, and welcome, General Pihl.

General Pihl, the Army received only two responses to its solicitation on the RDX. Do I understand that that will be recompeted?

General PIHL. Yes, sir; that is correct.

Senator JOHNSTON. Do you have a timetable?

General PIHL. Yes, sir; we want to be back on the street by June 15.

Senator JOHNSTON. By June 15?

General PIHL. Yes, sir; General Brailsford, the commanding general at AMCCOM, will have the solicitation out on the street.

We also are going to take a look at our acquisition strategy in terms of a fixed price incentive fee contract because we think that is why we have the nonresponsive bids. We are in an arena where cost-plus, where the Government and industry share the burden, is probably a better acquisition strategy, and we do believe we can recoup the ability to get on contract on time and not lose the moneys that have been previously appropriated.

Senator JOHNSTON. I understand there are some pretty tough provisions in that contract.

General PIHL. Yes, sir; there were. I understand industry's reluctance to sign up the way it was written, and so we now have to do a little trading.

Senator JOHNSTON. Well, we can pretty well count on that June 15?

General PIHL. Yes, sir; you can.

Senator JOHNSTON. Very good, General Pihl.

GOCO FACILITIES

General Pihl, I am concerned about the level of funding of the GOCO facilities. The necessary base, it seems to me, ought to be at about $2 billion a year, and it is pretty much under that. I think it goes from $1.8 billion in fiscal year 1988 to $1.7 billion in 1989 and $1.5 billion in 1990 and $1.3 billion in 1991. Is that going to be sufficient to keep that base?

General PIHL. No, sir, it is not. Right now under procurement of Army ammunition at the $1.7 billion level over time, we are $500 million short of what we would need to maintain our current Government-owned contractor-operated plants.

We have 17 active facilities counting the three Government-owned, Government-operated plants and 10 inactive facilities, and the base is structured now for metal parts and load assemble and pack. We have too many houses to build the required amount of ammunition that is coming out the other end. The pacesetting item in this is our movement from procurement of the M-483 155 millimeter dual purpose improved conventional munition to procurement of the M-864 base burner round which gives us extended range.

Senator JOHNSTON. Will that replace the 483?

General PIHL. It is a clear replacement, sir. You increase the range significantly and one of the things we know in the artillery duel with the Soviets we do not want to be out-ranged until we move into the M-864.

Senator JOHNSTON. Well, is there any truth to the rumor that the Army may be planning to move that 864 out to private industry?

General PIHL. As far as the metal parts are concerned, sir?

Senator JOHNSTON. Yes.

General PIHL No; it is our plan now to continue to split that between Scranton and Louisiana ammunitions plants. There have been offers from the private sector to do metal parts for the M-864 but at the present time we do not plan to take them up.

LAMP-H

Senator JOHNSTON. I am glad to hear that, general. You are in the process, I understand, of building a LAMP-H prototype. I am wondering what the requirements are for that over-the-sea capability for the Army and whether or not the LCAC can provide that capability?

General PIHL. Sir, the requirement for the LAMP-H is to carry an M-1 or a Bradley fighting vehicle [BFV] ashore as an amphibious lighter. The LCAC we understand has to load in the well of a ship and does not have the same capability that the LAMP-H does so we are trying to support General Schwartzkopf, the CINC of the central command, and get the LAMP-H fielded. Maybe General Shoffner would like to add to that.

General SHOFFNER. No, sir.

Senator JOHNSTON. Can the LCAC be modified in order to do that?

General SHOFFNER. I have not seen a modification that would do that, sir.

General PIHL. Not that we know of, sir.

Senator JOHNSTON. Have they been—have you asked those questions? I mean, it seems to me that that LCAC is a highly capable machine and in being, in production and it will carry the M-60, will it not?

LCAC LIMITATIONS

General SHOFFNER. Sir, I do not know the specific limitations of the LCAC. I would be happy to provide for you a comparison of the LAMP-H and the LCAC on the questions that you are asking.

Senator JOHNSTON. I would appreciate that.

[The information follows:]

The Navy developed Landing Craft, Air Cushion]LCAC] is an expensive assault craft and cannot perform either the Army or the Navy Logistics Over the Shore [LOTS] resupply mission. Because the LCAC, as an assault craft, is designed with high side walls to protect its crew and machinery, ocean ship cranes cannot extend far enough to off-load cargo from the ship to the LCAC, precluding use of the LCAC for the in-stream discharge of cargo required during LOTS operations. The LCAC also has a 40 percent less lift capability (60 tons vs 100 tons) than the LAMP-H to procure and operate, the LCAC is designed to be transported only in Navy-owned, gray bottom, wet well ships and cannot be transported to a theater of operation on the commercial shipping that is available to the Army.

The Army has arranged an independent assessment to be conducted on the technical feasibility and projected costs of using a modified LCAC to meet LAMP-H requirements. The results of this study will be known and considered prior to contract award of a LAMP-H prototype.

General FRANKLIN. The LCAC has a 70-ton capability. It can carry one M-1A1 tank.

Senator JOHNSTON. Finally, general, are you concerned about the ability to transport your tank force overseas in the event of a need to do that?

General PIHL. As far as sealift is concerned?

Senator JOHNSTON. Both sealift and airlift.

General PIHL. Yes sir; we are, and we need the support of our sister services to do that.

Senator JOHNSTON. Is that not really a higher priority than additional tanks?

General PIHL. Sir, the additional tank requirement comes from the reality of the modernization of their tanks and the fact that we need to stay current with the threat as I indicated in our M-10 plus 10 force. I would say they are certainly equal priorities.

Senator JOHNSTON. Thank you very much, General. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much for proceeding and continuing with our discussions with the Army, General Pihl. I would like to call upon the Marines. General Sullivan?

U.S. MARINE CORPS

STATEMENT OF MAJ. GEN. MICHAEL P. SULLIVAN, U.S. MARINE CORPS, DEPUTY COMMANDER FOR WARFIGHTING AND DIRECTOR, MAGTF WARFIGHTING CENTER, MARINE CORPS DEVELOPMENT COMMAND

ACCOMPANIED BY MAJ. GEN. RAY M. FRANKLIN

AIR GROUND TASK FORCE REQUIREMENTS

General SULLIVAN Thank you, Mr. Chairman. It is a pleasure to be here today representing the Warfighting Center at Quantico Marine Corps Base, VA. Some recent changes have taken place in the last year which I would like to talk about today.

First of all, responsibility for identifying requirements for the Marine Corps air ground task force, the warfighting capabilities, has shifted to Quantico. In the past, these requirements were developed by three separate branches of Headquarters Marine Corps—one that handles ground, one that handles aviation and the other combat service support.

The advantages to this transition is that at the Warfighting Center, we keep a balanced team so no longer do you have special interests. You cannot rob Peter to pay Paul. If you are going to build up something in aviation it has to come from existing structure. We know that the force structure will not get any bigger. If anything, it may get smaller. So we must maintain a balance across the entire spectrum of the Marine air ground task force.

At Quanico, we have a concept based requirements system. I am staffed with 105 officers, 30 civilians, and 18 troopers that have the ability to develop our requirements and serve as the proponent for the Marine Corps operational forces.

MISSION AREAS

We have 23 mission areas; 19 of which are warfighting. We do an analysis on these every 2 years so we can continue to validate and prove our systems. Based upon our total requirements we develop a plan which is based on the national strategy, defense guidance, and the mission of our forces assigned to the CINC's.

I think what is the most important is that we have precepts that are involved in identifying our warfighting requirements. I think we have lived by these pretty much since I have been in the Marine Corps. One precept is that we stay affordable.

That means, for example, that we look at a force of A-V8B's and F-18's at a price of slightly less than $18 million. And to the future, we are trying to keep it that way. We are not looking at the $70 million, the $100 million, or the $500 million aircraft. We are trying to stay affordable because that is what this Nation needs. As the Nation's premier force for forceable entry, we know this capability is required and we are trying to stay there with an affordable force.

MAGTF CAPABILITIES

Next, we want to make changes that only enhance capabilities of the MAGTF. A force can change all the time, but we do not want to do that. We take a look at what we have and only if it will make our warfighting capability that much better will we change; there are two cases where we will not change structure, doctrine or training, and we would have to go to new equipment. This will occur when either the technology leap is so impressive or our equipment is obsolete and the capabilities that we gain from that technology advance is far greater.

An example would be the tactical use of the helicopter in the 1950's, the development up to the AV-8 in the 1970's, and aircraft that we supported very heavily, the MV-22 today.

Also, we feel that our aviation platforms must be multimission. No more can you have an airplane like an A-6, a single mission airplane. It must do many functions and we are looking for that in the Marine Corps.

TILT-ROTOR AIRCRAFT

We are looking for the future, in 2010, to have an all vertical short takeoff and landing [VSTOL] or advanced short takeoff and landing [ASTOL] force. On one side we would like to have a hovering fighter attack airplane like a hovering F-18, if possible. The technology is out there. We need the commitment of the Nation and industry to make sure that this technology is developed.

On the other side we were looking at an all-tilt rotor force, except for the CH-53 for a heavy lift. An all-tilt rotor aircraft would not only be our assault helicopter but it would perform six other missions. It would replace five aircraft.

In addition to that, it would give us the technology that we need similar to the XV-15 today, to go to an all-tilt rotor force for our Huey and our Cobra aircraft. This means that we would have on one side one type of fixed-wing airplane, a VSTOL fighter attack, and on the other side a tilt rotor force. This lowers your intermediate maintenance activity [IMA] requirement by decreasing the troops required to maintain these airplanes because of the common military occupational speciality [MOS] skills and minimum types of aircraft.

We also believe that you must keep it simple and by that we mean, you can't buy every bell and whistle available. That is one of the precepts we use at the Warfighting Center. We try not to put everything on these airplanes in order to keep them reliable and affordable.

Even though we can fight the full spectrum of combat, we feel the threat is the low-intensity and the mid-intensity conflict around the Third World. That is how we are trying to structure our force.

THREE-PLAN PROGRAM

So from there, we have developed what we are trying to do in three plans. These plans have all been finished. Two of them are new. They are up at headquarters Marine Corps right now for a final staffing, and waiting for the Commandant's signature.

The two new plans are the Marine Corps campaign plan, which is a plan directed by the Commandant. This plan is for a series of actions in the next 24 months, which will improve our combat capabilities. The campaign plan will document where the Corps is going and why, what we will do, and in some instances who, how, and when.

The campaign plan will educate the Corps and institutionalize the requirement identification process. All Marines will be familiar with this. This is the Commandant's intent. Areas addressed are strategic direction, warfighting, doctrine, organization, planning, acquisition, personnel, training, professional military education, legislative affairs, public affairs, and summary guidance.

Then we go to our long-range plan. This plan encompasses a 20-year requirements projection which analyzes and validates what we see as the threat. Through new technologies, new requirements are developed and incorporated into the MAGTF master plan.

This is the big change in the Marine Corps today, because the long-range plan becomes the rudder for the Corps for the next 10 years. We have 49 initiatives and priorities within our current long-range plan. Our job at the Warfighting Center is to prioritize these requirements.

When the master plan is approved by the Commanding General of the Marine Corps Combat Development Command, it goes directly to the Commandant. The Commandant analyzes the priorities and then he incorporates those in with a supporting establishment master plan's priorities for our bases, our stations and then develops a final prioritization.

In the past the POM drove priorities. We are now establishing these priorities and the POM is changed to reflect our priorities.

We have 49 enhancements listed in the master plan. These 49 priorities are what has to be done. We do address such things as the type of aircraft or the radio required. It is the capabilities that we are looking for.

In the MAGTF master plan there are four main areas: Mobility, unit cohesion and enhanced training, command and control, and combined arms. However, we emphasize primarily requirements. Also in this plan there are four subordinate plans: Command element, ground combat element, aviation combat element, and combat service support.

EMPHASIS ON MOBILITY

But the areas we emphasize are mobility, and in that what we want to do is to continue to lighten the load. We are a light force. We are expeditionary. We fly off ships. We want to continue to do that and we feel that is the requirement.

To do that we have to stay expeditionary and capable of operating in an austere environment. That means sustainability from the sea. The continued emphasis is on forward basing afloat.

As we look around the world today, we are losing bases and overflight rights. So what better way to operate than off amphibious ships. Of our 27 tactical jet squadrons, eight of them can fly off amphibious ships. We want all 27 of them to fly off amphibious ships because we feel that is the requirement for the future; to be able to take Marine aviation where Marine ground forces are deployed. In the past we had to build a base, which we still have the capability, but if you have a 4 to 6 day conflict, it may be too late to do that.

UNIT COHESION AND ENHANCED TRAINING

Next is unit cohesion and enhanced training. We want to increase the tours and stability for our Marines. We want higher manning levels and we have this capability because we set the manning levels in the Warfighting Center for our infantry battalions, our helicopter squadrons, our surveillance reconnaissance, and intelligence units.

We want to improve the rapid response at the Marine Expeditionary Force [MEF] and the Marine Expeditionary Brigade [MEB] level, similar to our marine expeditonary units [MEU] specialo operations capable [SOC] afloat today. MEUSOC can respond in 6 hours or less—given a mission, they can execute. We are trying to do that at a higher level. We are emphasizing night operations in training because we feel that is what we have to do. People say helicopters are not survivable. I disagree.

CHEMICAL WARFARE

Also, we have to emphasize an awareness in chemical warfare and the defense for it. Command and control is the third. Again, we emphasize maneuver warfare philosophy, operating on mission-type orders, doing things that do not require all this technology, particularly if it is neither reliable nor affordable.

We are working on an improved, reliable command and control system that gives us sustainability and interoperability. We want to improve the all-source intelligence collection. We want to improve the remotely piloted vehicle [RPV] capabilities which we pioneered. The Marine Corps has five-sevenths of the RPVassets in this country. From the warfighting standpoint, we do not have the close-in RPV and the endurance RPV at this time. Today, the battalion commander still cannot see over the next hill.

We are going to streamline the command elements in headquarters. There is a proliferation of these. They tend to grow bigger. This cannot happen. We need more trigger pullers.

COMBINED ARMS

Lastly, we emphasize the combined arms effects of our Corps. We have the CH-53E, which is our big heavy-lift helicopter and carries our light assault vehicles, the LAV which is up to 29,000 pounds, and the M-198 155 mm howitzer. We are looking at a lightweight 155 mm howitzer. We are trying to get lighter all the time, to be able to respond quicker and with less logistics tail.

We are trying to get an all VSTOL/ASTOVL aviation force. Unclassified sources state that in the next conflict, every runway in central Europe will be destroyed within 48 to 72 hours. So with that kind of philosophy, we feel that you must be in the VSTOL or ASTOVL business.

The technology is here. I have been to conferences that indicate by the year 2000, every jet engine will put out double the thrust. There are other technologies. There is lift fan and I think the Nation really needs to look at getting into that kind of operation.

I have a chart in the back of my notes which will be included in the official record. It is the last chart and it explains the entire capability of how we identify our warfighting requirements at the Warfighting Center from the concepts and the requirements to validation and implementation.

Most of these requirements originate from the Fleet Marine Forces [FMF]. We do not profess to be the experts in the Warfighting Center. We get FMF Marines in at conferences who know what they need in the field. We listen to them and while we do not always agree, we do come to a meeting of the minds.

We have changed our organizational structure and the way we conduct our training. Our doctrine probably has not changed that much over the years. You can change tactics, techniques, and procedures but the doctrine is sound. It is time-tested. We may find a different piece of equipment that can do something, but we have not done much of a change here. What we are doing in the doctrine area is making it more readable. Instead of being 50 pages, it may be five and it is in bullet format so people can read and use it.

You could have put $100 bills in one of the old doctrine manuals and it would still be there 5 years later.

PREPARED STATEMENT

I stand by for any questions.

Senator INOUYE. Thank you, General. We will place your statement in the record and then proceed to questions.

[The statement follows:]

STATEMENT OF MAJ. GEN. MICHAEL P. SULLIVAN

Mr. Chairman, Members of the Committee:

First off, I appreciate the opportunity to appear before the committee and talk with you today about how the Marines Corps makes improvements in its doctrine, force structure, training, and equipment.

A modern fighting force must deliberately and constantly search for improved capabilities if it is to remain viable. It must, in turn, have a systematic method of implementing those improvements without risking the possibility of becoming an ever changing, unbalanced force. The secret to readiness, then, must lie in the control of necessary improvements and the maintenance of operational cohesiveness as changes are made.

The Marine Corps' system to manage change is designed to do just that. We have adopted a process which helps ensure that combat-ready Marines are available to meet the nation's security needs. The mechanism through which we accomplish this is the Concept-Based Requirements System or "CBRS." It was implemented to ensure that force capabilities are, in fact, changed on the basis of operational needs -- and that those needs are in concert with national security objectives. The Marine Corps Combat Development Command (MCCDC) at Quantico, Virginia, is responsible for execution of the Marine Corps CBRS. My first two charts crystalize the Commandant's intent for MCCDC.

There are two principal centers resident within the Combat Development Command: the Training and Education Center -- which manages the Corps' "T&E" requirements -- and the Marine Air-Ground Task Force or "MAGTF" Warfighting Center. I will focus on the Warfighting Center because it is the primary agency that determines our operational requirements.

At the Warfighting Center we have institutionalized the means to coordinate and validate the various inputs to the concept-based process that results in changes to our doctrine, training, force structure, and warfighting equipment. Those changes are based upon the operational requirements of our Fleet Marine Forces.

There are many things which influence our operational requirements, but the MAGTF Warfighting Center provides a centralized means to determine the necessary changes. Personnel there continually develop operational concepts to support future operating environments. The first step in the CBRS is evaluation of each concept's relative contribution to our force. This ensures two things.

First, it reinforces our focus on an employment of a combined arms team rather than on the effect of an individual item. Second, it provides an emphasis to our conviction that materiel solutions are not always the best means for resolving deficiencies. Improvements in our training, doctrine, structure, and technique may well provide a better total solution than can a change in equipment by itself. CBRS ensures that requirements are based on operational concepts and it precludes buying an item of equipment or fielding a new unit before a solid concept of employment is developed. The system is a flexible process, however, and it has the ability to permit accurate forecasting and quick response to technological breakthroughs, significant improvements in threat capabilities or immediate operational needs.

Operational requirements are generated from many sources and originate at all levels -- but one thing is certain. There are always more requirements than fiscal resources can support. As a result, we attempt to define and emphasize those changes that will make us most useful to the nation across a wide range of potential contingencies. We try to preserve that aggregate usefulness through a series of service plans which guide -- and, in turn, are guided by -- the CBRS.

Please turn to chart number three.

The concept-based requirement system receives its initial guidance from the first of three service plans: the "Marine Corps Campaign Plan." It is a formal document which describes the Commandant's intent for the Corps of today and tomorrow. It is a planning, policy, and guidance document -- broad in scope -- which provides direction toward fulfilling our service obligations. It lays out very broad strategies that guide the Marine Corps' requirements determination, planning and programming processes.

The "Marine Corps Long-Range Plan," the second in this planning trilogy, is a formal plan which projects Marine Corps concepts, capabilities and goals about 20 years into the future. It is revised by the Warfighting Center and approved by the Combat Development Command every four years and is based upon the threat, technology advancements, global trends and potential future missions for Fleet Marine Forces. Trends with potential military application are examined in the long range planning process. The end result is a package of concepts and goals which mid-range planners can further refine into operational concepts and present in our principal developmental document -- the "Marine Air-Ground Task Force Master Plan" or "MAGTF Master Plan."

This plan, as shown by chart four, incorporates defense guidance along with long-range goals, formal studies, mission area analyses, and input from the CINCs and Fleet Marine Force as the basis for mid-range planning. Marine planners -- all of whom have had recent operational experience -- weigh the need to correct existing deficiencies against the requirement to provide for future capabilities. The culmination of their efforts using the concept-based requirement process is the biennial publication of the MAGTF Master Plan.

The MAGTF Master Plan narrows our planning and programming focus to a point about 10 years in the future. For continuity, it also is developed at the MAGTF

Warfighting Center in Quantico and translates a wide range of valid force requirements into integrated, achievable, warfighting priorities. As such, it articulates these FMF-related prioritized inputs to the Service Program Objective Memorandum or "POM."

I wish to emphasize that, while the whole service PPBS system is involved in translating concepts into operational capabilities, the critical early decisions occur at the Warfighting Center. There, we scrutinize all aspects of the proposed change, but in doing so, we do not simply rely on professional judgement. Instead, we gain assistance in the decision making process through mission area analyses, wargaming, simulations and FMF test-bed programs. A good example of test-bed concept development was the light armored vehicle directorate maintained at our combined arms training center. Similarly, trial programs and exercises to validate new doctrine are also constantly being pursued there and at places like our aviation weapons and tactics squadron. When it becomes clear that a new, major piece of equipment is warranted, a formalized statement called a "Required Operational Capability" or "ROC" is issued from the MAGTF Warfighting Center. This becomes a key document in the acquisition process, for it defines the specific operational capabilities to be pursued.

The Marine Corps is in compliance with the Goldwater-Nichols Bill. When the solution does require new equipment, both the Combat Development Command and the Research, Development and Acquisition Command (MCRDAC) have complimentary roles to play. The Warfighting Center of MCCDC first establishes the concept of employment, supporting structure, and number of items needed to equip the operating forces. MCRDAC then selects the best acquisition package and determines the total quantity required. The combined effect of these actions by both Commands is to field needed equipment in correct quantities within the shortest possible time.

My last chart depicts the basics of our overall system. The sources of requirements or candidates for changes are many. It is our job at the Combat Development Command to sort those and (1) validate the requirements which fall within the Commandant's guidelines; (2) measure the impact of the change on our Corps; (3) evaluate all potential solutions to the problem; and, finally, to prioritize the consolidated list of requirements based upon operational need.

The final filtering takes place at the service headquarters. For those changes which require new funding, a cost-benefit analysis is made against the backdrop of all proposed service programs. Using the "SEMP," our Support Establishment Master Plan, which articulates the non-FMF priorities like basic training or housing construction, along with the operational force requirements, the Commandant formulates the Corps' priorities. He then submits the Marine Corps Service POM, containing all of the validated requirements which can be funded, for inclusion within the Department POM. Implementation begins when the budget is approved.

In summary, it must be understood that the Concept-

Based Requirements System is not simply a series of plans. It is a process that allows the Marine Corps to explore new concepts, analyze their impact, and develop them into requirements for programs that will improve operational capabilities. This process is largely accomplished at the Marine Corps Combat Development Command through the MAGTF Warfighting Center. It includes conceptual development, concurrent planning, alternative selection, mission analyses, testing, evaluation, and prioritization. When new equipment is all or part of the solution, the Combat Development Command works in tandem with the Research Development and Acquisition Command to provide the needed items within the shortest possible time.

BIOGRAPHY OF MAJ. GEN. MICHAEL P. SULLIVAN

Major General Michael P. Sullivan is currently serving as the Deputy Commander for Warfighting/Director, MAGTF Warfighting Center, Marine Corps Combat Development Command, Quantico, Virginia. Prior to this assignment, he was the Commanding General, 2d Marine Aircraft Wing, FMF, Atlantic, MCAS, Cherry Point, N.C.

From June 1985 until July 1987, he served as the Assistant Wing Commander for the 2d Marine Aircraft Wing with additional duty as the Commanding General, 10th Marine Amphibious Brigade.

General Sullivan, was born in Los Angeles, California. He was commissioned through the Naval Aviation Cadet Program, upon completion of flight school in October 1956.

General Sullivan's operational tours have included VMA-121, VMF-(AW)-513, NO. 23 SQDN (R.A.F. Exchange Pilot), VMFA-531, VMT-2, VMFA-122, 2nd Anglico, VMFA-314, VMFA-323 and two tours with MAWTUPAC. He served two combat tours in Vietnam, flying F-4s.

General Sullivan's other command tours include C.O. VMFA-323, MAWTUPAC, MAG-11 and MAG-41.

Staff tours have included Assistant Chief of Staff G-3, Assistant Chief of Staff G-1 3d MAW; Aviation Instructor; Staff Planning School; LFTCPAC; MCCRES Aviation Evaluator HQMC; and two tours as the F-4/F-8 Flight Test Officer at Cherry Point, N.C. and North Island, Calif.

In 1974, General Sullivan was awarded the Alfred A. Cunningham Award as Marine Aviator of the Year. He is a graduate of San Diego State University and the Naval War College.

His personal decorations include: the Legion of Merit with gold star in lieu of a second award; Distinguished Flying Cross; Meritorious Service Medal; Air Medal with 1 gold star and Numeral 23; and two Navy Commendation Medals, one with Combat "V". He has over 8,000 flight hours primarily in the F-4 and other fighter aircraft. He is currently qualified in the F/A-18 and the AV-8B and flies all Marine helicopters.

Major General Sullivan and his wife, Nicole, have three sons, Steven, John and Byron.

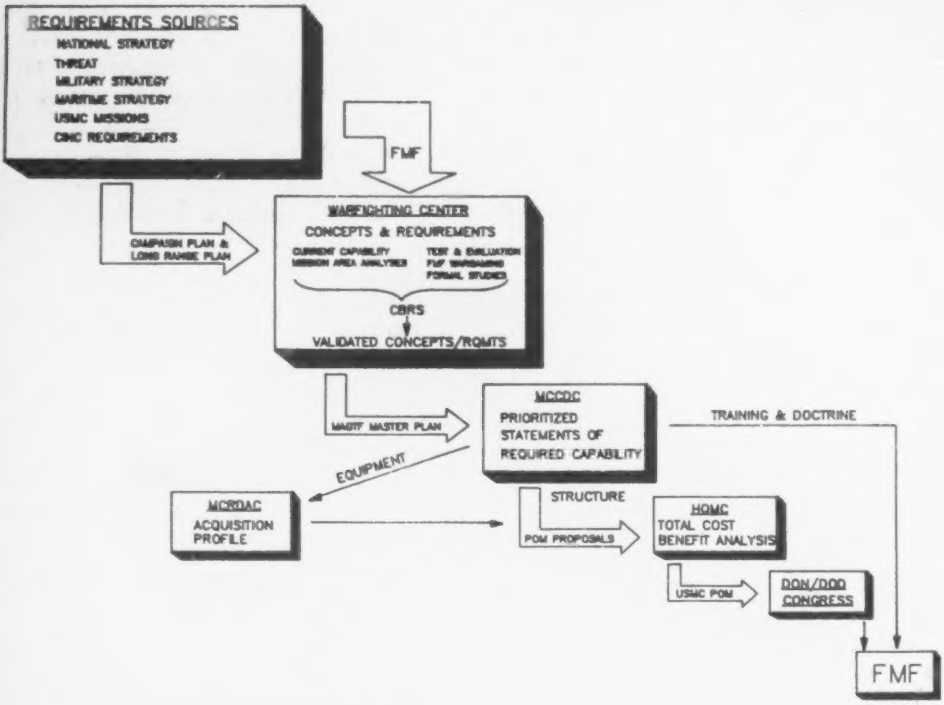

REQUIREMENTS SOURCES
NATIONAL STRATEGY
THREAT
MILITARY STRATEGY
MARITIME STRATEGY
USMC MISSIONS
CMC REQUIREMENTS
FMF
CAMPAIGN PLAN &
LONG RANGE PLAN
WARFIGHTING CENTER
CONCEPTS & REQUIREMENTS
CURRENT CAPABILITY
MISSION AREA ANALYSES
TEST & EVALUATION
FMF WARGAMING
FORMAL STUDIES
CBRS
VALIDATED CONCEPTS/RQMTS
MAGTF MASTER PLAN
MCCDC
PRIORITIZED
STATEMENTS OF
REQUIRED CAPABILITY
TRAINING & DOCTRINE
EQUIPMENT
MCRDAC
ACQUISITION
PROFILE
STRUCTURE
POM PROPOSALS
HQMC
TOTAL COST
BENEFIT ANALYSIS
USMC POM
DON/DOD
CONGRESS
FMF

CHART 1.—A REVISED SERVICE PLANNING SYSTEM

CMC intent: Increase operational voice in Service decision making; strengthen the conceptual framework for requirements determination; and increase the influence of Service Plans (i.e., long-range goals and mid-range objectives) on day-to-day program decisions.

CHART 2.—A REVISED SERVICE PLANNING SYSTEM—(CONTINUED)

MCCDC tasks: Establish a combat development process; build an organization to explore and evaluate warfighting concepts; determine goals and objectives; develop structure, manning, and equipment requirements; prioritize all operational needs; and publish a series of revised Service Plans to guide change.

CHART 3.—THE SERVICE PLANS "TRILOGY"

The Marine Corps Campaign Plans (MCCP).
The Marine Corps Long-Range Plans (MLRP).
The MAGTF Master Plan (MMP).

CHART 4.—MMP ROLE

Principal service developmental plan (FMF).

Basis for: MAGTF subordinate plans; FMF "PEG" (priority listing); FMF-related initiatives; POM justification/defense; and post POM evaluation of actions (POM) vs objectives (plans).

Two year cycle (offset POM).

EQUIPMENT DIFFERENCES

Senator INOUYE. Well, I can assure you that at the earliest I will be around to watch your heartbeat, sir. In the past 5 months like all Members of the Congress I returned home and met with my constituents at community gatherings and veterans meetings. Because of my new assignment as Chairman of this subcommittee many of the questions have evolved around this assignment and you can almost guarantee that at every meeting a question such as this will come up.

It might sound too simple to you, but it is one that the folks are asking. The Army and the Marines fight on the land and most of these fellows that were in Vietnam or Korea, or the Second World War, why do they have to have all this different equipment? How would you answer them?

General SULLIVAN. We do have many common pieces of equipment. Much of our equipment is the same for warfighting on the land. Where we differ, mainly, is in aviation and in our amphibious roles and missions. We have different requirements and different missions. We come from the sea and we fly off amphibious ships. The Army does not.

As far as the high intensity conflict, much of the weapons are the same. We are tailored to be very light, like the light Army infantry divisions of today. We can get out of town tonight. We do not have to mobilize. We have the capability to go at whatever level is needed. We are a combined arms force of air and ground. That is the Marine air ground Task force that can be tailored to meet whatever the threat may be.

LOW-INTENSITY CONFLICTS

Senator INOUYE. Can the Army not get involved in low intensity conflicts, also?

General SULLIVAN. Yes, sir; but we can employ a Marine force faster. If there is not a base for a C-141 or a C-5 to land and you are going to parachute in the airborne, that is a possible way to deploy if the threat allows it. But by coming from the sea, from over the horizon, which is one of our concepts, it provides for a more flexible response to the threat. That is our technique and we have a global mission, not just one area. We are prepared to go anyplace and that is what we train to do.

Senator INOUYE. I agree with you that these low intensity conflicts that we find percolating in Third World countries may be the beginning of the big one and there may be times when men in uniform will be called upon to involve themselves in such conflicts. In our hearings we have heard conflicting views on the difficulty we may have in transporting personnel and equipment to such areas. Do you find that a problem?

General SULLIVAN. Yes, sir; we considered that and that was one of the capabilities of the aircraft we are so interested in—the MV-22. For instance, in the latest incident in Panama, we could have flown the Marines in MV-22's nonstop from Cherry Point, NC, via aerial refueling. Without aerial refueling, MV-22's would have refueled at Tampa, FL, and then flown into Panama. A big runway would not have been required. These are ways that we are looking at toward the immediate future to help alleviate the strategic lift that is so important for all of us.

Senator INOUYE. In other words, if a need arose today the Marines may have difficulty responding?

General **Sullivan**. I do not believe so. We have Marines on amphibious ships at float today. We have Marine expeditionary brigades [MEB] forward and our Marine expeditionary units—special operations capable. These units are comprised of a 2,200-man air-ground team, floating in the Mediterranean and Pacific 365 days a year with excursions to the Caribbean and the Atlantic. These units are ready to operate and they can be augmented very quickly. They are forward deployed from the United States and are usually close to probable trouble areas.

ATTACK HELICOPTERS

Senator **Inouye**. These questions can be responded by both, if you wish. For example, the Army uses the Apache. Marines use the Cobra. Both are attack helicopters. Why two different types?

General **Sullivan**. The Apache was not bought for the Marine Corps.

General Franklin?

General **Franklin**. The real problem with the Apache was not really a problem for us, except that it was not marinized. The cost to marinize an aircraft to operate off ships, for instance, to put on a blade fold and to shield all the harnesses so that you do not cook the electronics when the ships radar rotates, is substantial.

We like the Cobra. The Cobra was orginally a marinized aircraft and we felt that we could upgrade the Cobra much cheaper. And that is exactly what we did.

General **Sullivan**. In the war-fighting requirement, sir, we looked at the attack helicopter to be replaced by the tactical tilt rotor, a Marine attack observation aircraft [VMAO], a small version similar to the XV–15 flying today. It would pick up the mission of both the Huey and the Cobra.

COBRA-APACHE COMPARISON

Senator **Inouye**. Is the Cobra better than the Apache?

General **Franklin**. You really cannot make that comparison. I think the Apache is a very capable aircraft. I have flown the Apache. I like the Apache, but I cannot afford the Apache. I can afford the Cobras. I have got the maintenance people trained for it. I have the pilots that have trained in it; they are good on the system.

The Apache is a very sophisticated aircraft and much more sophisticated than the Cobra. We have elected to stay with something we know and trust.

Senator **Inouye**. The Army agrees with that?

General **Pihl**. Sir, we believe in the Apache as our ability to fight at night. It is our antiarmor force when we are in that close battle to fight against a large number of tanks where we are fighting outnumbered and we intend to win. We built the Apache to solve that threat requirement.

The Marines and the Army fire the same missile system that we have in their larger Cobra; they have the Hellfire missile, as we do, on the Apache weapon system.

So we went to AH–64 in the early 1980's in order to put our aviation battalions into a true heavy tank killer. It is, in fact, probably the world's most sophisticated attack helicopter, and it is also one of the world's most effective attack helicopters.

We believe, in terms of payload lethality and its ability to deliver steel on target, we have a winner.

General **Shoffner**. Sir, I would like to add a comment on the Apache and the combined arms argument that you ask: Why do you need the different kinds of weapons? Putting the Apache on the battlefield along with the competent Abrams and Bradley forces, fighting at night, is the kind of fight we would like to present to the Soviets. He does not have a good night-fighting capability.

We put a lot of emphasis on training our commanders at the company level and the battalion level to bring to bear two or three or four different ways in which he can kill the enemy, and to integrate those and present those to the enemy all at the same time. So that when the enemy force is looking and worrying about mines on the ground that have been put out through scatterable mines with artillery, and he is buttoned up because he is getting incoming artillery fire, and then he gets lit up by a TOW firing at three kilometers and he is looking for that TOW launcher so he can find it and suppress it, and then at the same time he gets lit up by a tank that is firing at a closer range at a much faster bullet, and then in that environment, if he can bring in the air from atop and the side, that enemy battalion commander does not last very long, maybe 8 to 10 minutes.

So our emphasis on the combined arms fight, our emphasis on training so that they can integrate all of those components is the sort of advantage we believe that must be presented if a small force is going to whip a bigger force and have great numbers to deal with.

So our move is to deal, as General Sullivan indicated, his focus on LIC and MIC, the low- and mid-intensity, our focus is on the low and mid as well as the high. And so in the high-intensity environment with the presentation rate that one has and the difficulty of dealing with those, a capability greater than the Cobra is required.

CH-47 VERSUS CH-53

Senator **Inouye**. I will not ask any questions on the Osprey or the V-22, because that is the special purview of my colleague from Alaska and I will leave it up to him.

But on the matter of the heavy-lift helicopter, you use the CH-47 and the Marines the CH-53. Why the difference?

General **Shoffner**. I do not know that I can go to the origin of that. I can explain the differences as we are using them today.

The marinization may be a difference.

Ray?

General **Franklin**. The major reason I would say is partially historical. If you go back in history, you will see that the Grumman Aircraft Corp. built Navy aircraft for years and years, and they were called the Grumman Iron Works because they could smash onto a carrier deck and the gear would not fold up and crumple. It just became almost historical that the Navy always flew a large number of Grumman aircraft.

The Marine Corps has historically flown Sikorsky aircraft. We have grown up with a community of maintenance people and pilots who are used to Sikorsky airplanes, who have flown them since the days of the H-19, H-34, H-37, and finally the H-53AD and now the CH-53E. We have a maintenance history and we have a pilot training history. We like the single-rotor machine with a tail rotor.

The Sikorsky people have always built aircraft that incorporates blade fold. Sikorsky built aircraft are marinized. I would guess it is probably a habit pattern as much as anything. We could have bought into the CH-47 years ago, added blade fold capability and made it work, but we did not. The CH-53 was available and it was what we wanted at the time and we bought. We have bought three versions of the CH-53.

MARINIZATION

Senator INOUYE. You use the word marinize. You must forgive me, I am new here. What does that involve?

General FRANKLIN. Primarily it means making an aircraft shipboard compatible. That is no small task. In the helicopter business it is blade folding. You must be able to land on a pitching deck in a high wind; stop the rotors; fold the blades; put it on the elevator and get it below. You just do not do that with a plain old land-based helicopter; that is impossible to do. You wind up with your deck cluttered with about five machines and that is it. You are out of operation. That is part of marinization.

Another part of marinization has to do with your electronics and avionics systems. They have to be shielded. If you are going to launch ordnance from that airplane, all of the firing circuits have to be shielded.

The Navy is very nervous about putting live ordnance in a firing tube on a deck without having a completely shielded system with fuses out of line and all the other requirements, simply because one sweep of the surface-search radar and you do not know what is going to happen with unshielded electronics. So that is part of marinizing. Those are really the two large areas.

In fixed-wing aircraft, it is beefing up the landing gear, putting on the tall hook, those kind of things that allows the aircraft to land on a big-deck carrier.

Senator INOUYE. In your presentation you said that you could not afford the Apache. I am just curious, what is the cost of the marinized Cobra as compared to the Apache; is it that much difference?

General FRANKLIN. I would have to take that for the record. I do not have those off the top of my head. I should explain one thing. The Marine Corps does not buy airplanes. I do all the procurement for the Marine Corps. I procure only ground systems. Marine squadrons are Navy squadrons run by Marines.

[The information follows:]

HELICOPTER PROCUREMENT COSTS

The Cobra (AH-1W) procurement cost is $8.7 million as opposed to an unmarinized Apache (AH-64) procurement cost of $12.3 million.

Senator INOUYE. Even the helicopters?

General **Franklin**. That is correct; we do not procure the helicopters. If you look at a Marine squadron, all of the aircraft are naval aircraft; the supply system is Navy supply; the maintenance system is naval maintenance systems; we go to naval schools; we are naval aviators. We do not buy aviation equipment, with the exception of air defense and the ground radars and the air command and control. Those are the only things that I buy with Marine Corps dollars. The Navy buys all of our airplanes. Those bureau numbers painted on the side are Navy bureau numbers.

Senator **Inouye**. But the pilots on the Cobra are Marines?

General **Franklin**. Yes; but the aircraft belongs to the Navy.

General **Sullivan**. Sir, one thing on the CH–53E. It has a better lift capability than the CH–47. We would not be able to carry our LAV today without the CH–53E. So lift requirement for our rolling stock is the weight for what the CH–53E can in fact carry.

Senator **Inouye**. I am just curious. If that is the case, you said the Navy purchases aircraft; why did they purchase Grumman for themselves and Sikorsky for you? Why do they not just pick on Grumman?

General **Franklin**. Grumman makes fixed-wing aircraft and Sikorsky makes rotary wing. That is probably the difference. We flew the Grumman fixed-wing aircraft; the same as the Navy did. The A–6, for instance, the old F–4 McDonnell-Douglas aircraft was a Navy aircraft flown by Marines.

V–22

Senator **Inouye**. We should name the Osprey something else.

General **Franklin**. The Osprey is a seahawk.

Senator **Inouye**. We will call it the Alaskan seahawk, and I will call upon Senator Stevens.

Senator **Stevens**. Well, the chairman is very kind to yield on this issue to me. Of course I believe that, as I have said before, if you have the chance, make a breakthrough in technology and develop new technology for the benefit of the whole aviation community.

But I am disturbed with this decision that Secretary Cheney has made. We will be talking to him more about it, but it is really not a one-for-one tradeoff for the Marines, as I see it. Staff has got some figures together that indicates your force structure will have to be expanded if you operate the CH–53's; up to 4,000 more Marines for the operation of the CH–53's. And you will require a large number of the Ch–53's to meet your mission requirements. And yet that CH–53 does not have the same operational capabilities as the V–22.

I would like to know, General Sullivan, have you compared the CH–53 capabilities, the operational capabilities to the V–22: Range, speed, capacity, mission priorities, for the Secretary?

General **Sullivan**. Yes, sir, we have. It was the CH–53E and the CH–60. It was exactly what you have said. We find that if we went to the CH–53/CH–60's, it would require 364 more aircraft; it would require 522 more pilots and about 5,000 more personnel to maintain it.

Senator **Stevens**. So it is not really a cost-effective decision, the way I look at it, that you would see the cost in terms of long-term cost, or is it just the fact that the V-22 is still in R&D and you can purchase off the line now?

General **Sullivan**. Yes, sir; I have seen the cost. It depends upon how you compare them, but it is the capability that you buy. We said, we look for new requirements for new equipment that is a significant technology leap and enhances that capability tremendously. That is what we have with the MV-22. We are flying a 25-year-old airplane with the CH-46. If we do not get an airplane like the MV-22, we are going into the next century with 1970 technology in helicopters and fly it for the next 35 years.

WHY THE MV-22

Senator **Stevens**. That is what really worries me. Here is one aircraft we could take into the next century and be a new-type aircraft. I wonder, General Pihl, why the Army did not get on board this V-22?

General **Pihl**. Sir, we looked at the V-22 in the early years, 1980-82 timeframe, for our special electronic mission area: Our Guardrail, our jammers, our listening devices that are airborne. We also looked at the V-22 for medivac, and indeed, we put a wedge in our program objective memorandum from 1988 to 1992 for 231 aircraft.

Two years ago when we put together the Aviation Modernization Plan we had to forego the V-22 at that time because we were more interested in getting light scout, armed reconnaissance aircraft that would retire our aging Vietnam-vintage aircraft, our Cobras and OH-58A's and B's, in the construct of the aviation modernization plan at an average $3.5 billion a year, which under President Bush's budget, drops to about $2.9 billion.

With the cancellation of the AHIP and a truncation of the Apache program, we are able to continue the Blackhawk, continue the Apache, and to build LHX. As we looked at our missions, the essential differences, we get our airlift from the U.S. Air Force.

Senator **Stevens**. Well, it is my understanding that LHX no longer has the transport utility mission; is that right?

General **Pihl**. That is correct, sir. We have zeroed in on the 2,100 light-attack, armed reconnaissance birds.

Senator **Stevens**. Why wouldn't the V-22 be more cost effective?

General **Pihl**. Sir, because at the present time we have the Blackhawk helicopter, the UH-60, which provides the bulk of our troop lift in the Army. We are going to build some 2,000 of those aircraft. So in terms of medium troop lift, we already possess the capability for our air-mobile divisions.

Senator **Stevens**. Doesn't the V-22 give you more speed and flexibility in terms of battlefield operation than any helicopter?

General **Pihl**. Sir, it would, in terms of that long-range dash speed and the ability to sort of have a jump aircraft, vertical take-off, and then tilting the wings and going forward.

As we did our studies on LHX, when there was still a utility version of the aircraft in the program, when you go from a 10,000 pound weight class aircraft down to 7,500 empty weight, you really come out of the tilt-rotor regime. We are going to fight down in the clutter at the nap of the Earth and we are looking for armed aircraft as opposed to lift aircraft.

Senator **Stevens**. I am told it is your judgment you would need fewer V-22's to meet the requirements of the UH-60's?

General **Pihl**. Yes, sir, except in terms of unit integrity and the ability to lift units in our air assault division, the 101st. So it is a question of the numbers of ships you would use in an air assault.

General **Franklin**. Senator Stevens, if I might say just a couple of things. First of all, we believe that the Secretary made the only decision he could make based upon the facts he had. The Marine Corps supports his decision. There is no doubt about that. He made a decision based on cost. Our problem was we had a very expensive aircraft coming along at a time of a declining budget.

So the Secretary made what we think was the best decision he could have made based on the facts he had. It was not an operational decision; it was a cost decision.

V-22/UH-60 OPERATIONAL NUMBERS COMPARISONS

I will give you just a few of the operational numbers in the V-22 versus the UH-60 and why we fought so hard for the operational reasons. We salute what the Secretary says, and that is the way we are going to march off. We will do exactly what he wants us to do. Let me give you some numbers.

The V-22, 24 passengers; the UH-60, 12 combat-equipped Marines.

External lift: The V-22, 11,600 pounds; the UH-60, 8,000.

Cruise speed: 275 knots for the V-22; 138 knots for the 60.

Range: 1,100 miles with in-flight refueling—if you want it, you can go around the world with the V-22; range for the UH-60, 250 miles.

Endurance: Four hours on board; the UH-60, 2 hours and 18 minutes.

Combat radius: For the V-22, 400 miles; for the UH-60, 120 miles.

IR suppression: For the V-22, yes; the UH-60, no.

Ballistic tolerance: 12.7 millimeters for the MV-22; 7.62 for the UH-60.

Night capability: Clear and GPS for the MV-22; night-vision goggles for the UH-60.

Deicing: The V-22, yes; the UH-60, partial.

You compare the two aircraft; there is no comparison. When you look at the bottom line of the dollars, the UH-60 looks very attractive until you start adding the extra pilots and the extra maintenance people.

Once again, we support the Secretary's decision. Operationally, we still think the V-22 is a good buy.

Senator **Stevens**. Well, my first wife used to say, you never get anywhere if you let your old car eat tomorrow's lunch. You know the trouble is you are still paying for extra people, extra maintenance, and extra cost in terms of more aircraft well into the future. On an annual basis, I just do not believe that the bottom line is really there.

You have got a bottom line in terms of the 1990 budget problems, and I understand that; but if you put together, say, the next 10 years and add them up, you would be better off to go into new technology as quickly as you can get there, because that bottom line keeps going down every year.

Soon you are going to be eating your own lunch just to fly the old ones; where the new ones would give you greater versatility, greater payload, and fewer personnel requirements as you turn the century.

I have got to tell you I just cannot understand this decision from the point of view of cost, either, except in terms of meeting the budget restrictions for 1990 and 1991. And they are tough. But it is a short-range decision that is going to cause long-range cost complications for those of us who are trying to watch these budgets.

I am still going to try and find some way to work it out; I do not know how. I will have to visit my friend here somehow, but we have got $2.2 billion into that new equipment. And this jettisons that; closes the line. It is closed now, is it?

General **FRANKLIN**. As of yesterday, the contractors have agreed to continue to operate on their own nickel until September to see if something happens. They are eating their own children right now. They will be $130 million in the hole come September. We could have a couple of major companies in serious trouble.

Senator **STEVENS**. Every time I think of war, in the sense of having young guys get off of a battleship or off a troop ship and join part of an assault force, I think of what these things could do from a stand-off basis. One or two of them on each troop ship take off, whether Marines or Army, and get ahead of the time and get in there and establish a beachhead so that the other guys would be able to have some protection coming in.

I think the stand-off capability of the V-22, alone, justifies its expense. You can put one of these on every destroyer. You could put them on almost any vessel that will hold a helicopter, particularly in war-time situations.

I was watching the Doolittle 25's take off of that aircraft carrier the other day and realized how it has been such a long time and we have come such a short way from there. Here is new technology that would make that capability available on every ship in the Navy.

You could have people on every assault ship in an attack mode with these things. I just do not understand. You could not do it with helicopters, they do not have the range.

General **FRANKLIN**. That is right.

OVER-THE-HORIZON ASSAULT

Can I just paint a quick picture of the over-the-horizon assault for you as we envisioned it with the V-22?

If you look at an amphibious task force 24 hours off the east coast of the United States, that force can make 20 to 25 knots during those 24 hours. On board these ships, you have V-22's/CH-53E's, LCAC's, and high-speed amphibians. These are the three legs of the triad required for over-the-horizon assault.

That amphibious task force threatens an area from Providence, RI, to Fort Lauderdale, FL. Now, that leaves the defender with a hell of a problem. Which beach does he defend between Providence, RI, and Fort Lauderdale?

Within about 250 miles of the shore, we begin launching V-22's in small numbers; company-size raids. He has to pull back several miles from all the beaches and form a very mobile force. He is now sitting in his bunkered headquarters and little V-22 groups of people are landing in various spots all over the east coast. He is getting reports from 12, 15, 20 places, all with little running sores. Which one is the real assault? When does he start making good decisions?

At 75 miles we start launching LCAC's with heavy equipment. At about 40 miles we begin launching the high-speed amphibian tractors.

The first time he really knows where the assault is coming is when the high-speed amphibians come over the radar horizon, about 12 miles out. He has got about 12 minutes to make a decision. It is too late, because we have got people all over him at various road intersections, airports, and seaports. He has got a lot of small running sores in his country.

We think that that over-the-horizon, dispersed, highly mobile attack force is the way to tackle the bad guys in the future. Unfortunately, you cannot do it with conventional helicopters.

Senator STEVENS. One last question, and I appreciate your patience, Mr. Chairman. I think this is the most disappointing decision I have seen a Secretary of Defense make in my whole time on this committee. I think that it was made too quick.

But have you determined, and I know you cannot recommend it, but have you determined what would be a minimum amount necessary to continue the R&D through 1990?

General FRANKLIN. Sir, I would like to take that question for the record and let the Navy answer it. It is really a Navy question. Mr. Garrett should answer that question for you. I do not know that number. But I know that NAVAIR can get it for you.

Senator STEVENS. All right. I would like to have it.

I am not sure the Navy has not got other priorities in what it wants to spend Navy dollars for in aviation. That is one of your problems. If you had money for Marine aviation, I do not think there would be any question that the Secretary would have saved that money for you for Marine aviation. But you have to share the Navy dollars and they had other priorities for Navy dollars. That is the great problem we face right now.

But I would like to have that figure: What is the minimum keyhole we can get through in 1990 and 1991 in order to keep this thing at least on the screen?

[The information follows:]

R&D EXPENDITURES IN FISCAL YEAR 1990

The minimum amount required for R&D in fiscal year 1990, assuming production of 12 aircraft in fiscal year 1991, is estimated to be around $311 million. In addition, $250 million would be required in APN for advance procurement.

Senator STEVENS. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Some of you may be wondering why we are approaching the hearings in this fashion. As you may have noted, we have not heard from the secretaries as yet. We have called upon personnel that have never appeared before this subcommittee. We have had meetings with CINC's.

I believe we should be concerned about mission and foreign policy considerations—why we need to be there, what it would take to carry out our mission, and what should the strategy be.

I would prefer to have men like you or field commanders tell me what is necessary than the young geniuses in OMB, because they are not the ones who will be doing the fighting; you and your men and ladies are the ones who will be doing the fighting.

So that is why I appreciate the candor in which you have responded to our questions. We have at least an inch-thick list of questions we would like to submit to you, otherwise we would be going on for at least another 10 hours.

APACHE AND AHIP

I have been looking over this fine document that you people put out, "The Weapons Systems of the United States Army," and I notice that there are two helicopters, one, the Apache, and the other, the AHIP. Both are going to be cancelled. Yet these are the centerpieces.

Do you people think it should be cancelled?

General PIHL. When we printed that book, sir, at the beginning of the budget submit, we had both programs in our budget request.

Senator INOUYE. You felt it was important then?

General PIHL. We do. The decisions on the AHIP came down to the future versus the current, in terms of a light scout attack helicopter. We felt that, in terms of our future and the significance of the LHX to the future of Army aviation particularly, and its unlocking the retirement issue that we faced, those 2,000 aircraft that we are going to take out of our force, that given the hard choice of whether or not you want an AHIP or an LHX, we clearly chose LHX.

In the case of the Apache, at one time in my work in this industry, and I have been in it a long time, we had a requirement for some 475 helicopters. We then saw, in terms of battalions of Army aviation, the ability to build 47 of these battalions to provide deterrence war-fighting. So the question is truncating the program from the larger requirement of 975 aircraft down to 807 and terminating the program in 1991.

Both of those decisions are a measure of the Army's resolve to build the light attack helicopter experimental. They were LHX-derived decisions. We believe that the future, that battlefield of 2,000 that Senator Stevens talked to, is key. The ability to fight and survive on that battlefield, a complementary modern aviation system was needed. So we have sort of locked arms around the priority for an LHX.

PROGRESS OF LHX PROGRAM

Senator INOUYE. Is the LHX program far enough along and performing well enough to cancel the AHIP?

General **Pihl**. Sir, in terms of demonstrated performance, since we are still in demonstration and validation, the answer is no. We have a lot of indications on how successful the LHX is going to be. But the real cancellation of AHIP and Apache was done on affordability.

Senator **Inouye**. General Pihl, I want to thank you, if I have not done so in the past, for taking me to Aberdeen.

General **Pihl**. Sir, it was a privilege.

Senator **Inouye**. I can assure you that I learned a lot there. Up until then it was pictures and reading material.

I would like to do the same with the Marines, and go to your equivalent of Aberdeen. Could we fulfill that by going to Quantico?

General **Sullivan**. Yes, sir; we would be glad to have you come down.

Senator **Inouye**. Or would Twenty-Nine Palms be better?

General **Sullivan**. They would both be good.

Senator **Inouye**. The testing will be there also?

General **Sullivan**. The testing is at various places, sir. We have a command that does the Marine Corps testing and operational evaluations.

Senator **Inouye**. I only regret that more members were not present today. But, as I tried to suggest to you when I came in 5 minutes late, that there are so many meetings go on at the same time. Most of the members of this subcommittee are so senior that they are either chairman or ranking members of other committees. So that is why they are not here.

Well, once again I want to thank all of you for your forthrightness. I just hope you do not get into trouble with the Secretary. [Laughter.]

SUBMITTED QUESTIONS

Senator **Inouye**. The Secretary may not relish some of the responses you have made, but I can tell you that it has been extremely helpful to me as chairman of this subcommittee. I am going to urge that my colleagues read the record.

I will be either at Quantico or at Twenty-Nine Palms, or both of them, and I wish to go back to Aberdeen if time permits, sir.

General **Pihl**. Yes, sir.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

STINGER RMP MISSILE

QUESTION. General Pihl, the Committee understands that the Stinger RMP (Reprogrammable Micro-Processor) missile has not been fixed and the Army has yet to accept a single RMP missile from the contractor. In fact, the contractor (General Dynamics) has been producing this missile configuration since FY 1987 and over 5000 fully assembled RMP missiles are in bunkers awaiting acceptance by the Army. To further compound the problem, the contractor is adding over 800 per month to the bunkers because the Army has allowed the contractor to continue producing missiles. General, will you please tell the Committee how much longer it will take to fix the RMP problem and get the missiles out of the bunkers and into the hands of the troops?

ANSWER. Based on the results of missile tests conducted during the April-May timeframe which demonstrated that the missile hardware design is good and the missile with the latest software version is effective against the advanced threat, the Army decided to begin the acceptance process in June 1989. OSD concurs in this determination. The bunker missiles will be transferred to Army ownership over the next few months in accordance with contract stipulations and normal acceptance procedures.

QUESTION. General Shoffner, the Committee has been recently informed that the Army is pursuing a new surface-to-air weapon, known as the Complementary Missile, which will operate side-by-side with the Stinger on the PMS (Pedestal Mounted Stinger) platform. Did this requirement for a new, Complementary Missile, come from the OPS (Operations) community? Has the Army done a Required Operational Capability (ROC) study to support a Milestone Zero decision?

ANSWER. The requirement for the complementary missile orginated from the operational and user community as a Preplanned Product Improvement program (P3I) for Pedestal Mounted Stinger (PMS). This is listed in the PMS Required Operational Capability (ROC). The Army has not prepared a separate complementary missile ROC Document to support a Milestone Zero Decision.

QUESTION. General Pihl, how much money is in the FY 1990 budget for the Complementary Missile? Can you give us some idea of the development, testing, and acquisition plan for this new missile?

ANSWER. There are no funds budgeted in FY 1990 for the Complementary Missile. The Complementary Missile is in the Pedestal Mounted Stinger, Line of Sight-Rear component of FAAD, Required Operational Capability as a pre-planned product improvement to equip the light divisions. The Army's current plan for acquisition of a complementary missile is to follow an NDI strategy which will minimize any development and testing activity. Boeing, using R&D funds, is currently studying the feasibility of adding a complementary missile to PMS. The study addresses the weight, space, power available, and integration issues associated with existing candidate complementary missiles. Currently,

procurement of the Complementary Missile is envisioned to begin no earlier than FY 1994.

Question: General Sullivan, what impact does the delay in the Stinger RMP have on the Marine Corps?

Answer: A continued delay in delivery presents a significant short fall in capability and sustainability. We are confident however, that the problem will be resolved and no significant impact will result.

ARMY AVIATION MODERNIZATION PLAN

QUESTION. General Pihl, last year the Army released its first aviation master plan balancing current and future aviation requirements in a constrained fiscal environment. With the revised budget, purchases of your current helicopter programs have all been reduced or cancelled, but the future Light Helicopter (LHX) has been protected. What happened to the Army Aviation Modernization Plan and the balance between current and future needs?

ANSWER. The original Army Aviation Modernization Plan (AAMP) was based on a level funding concept with a base year of Fiscal Year 1989 dollars of $3.5 billion utilizing two percent real growth and escalation for the out years. The AAMP major system requirements were balanced using these resources. The LHX is the Army's centerpiece for the Plan and for the future. Army aviation had to pay it's fair share of the amended budget decrements. Keeping the LHX as the centerpiece to the AAMP, it was necessary to balance reductions and cancellations of other systems.

QUESTION. Three years ago, the Army tried a similar approach in cancelling AHIP and Apache. This was reexamined by the Army and rejected. Why is this approach appropriate now? What new factors on LHX make it less risky now than it was before?

ANSWER. The main factor that enters into the Army's equation for revamping it's Aviation Modernization Plan is affordability. The original resource assumptions have been drastically reduced through the Five Year Defense Plan (FYDP). To dedicate these reduced resources in a balanced approach, it was necessary to re-look the direction of Army aviation. Army aviation's first agenda was to protect the LHX program for the future. LHX program risk for entering Full Scale Development in FY 91 is assessed as low-medium. The FY 90 budget request funds the final increment of the competitive Demonstration/Validation (DEM/VAL) phase. The program has progressed through a series of planned and effective concept exploration and DEM/VAL efforts to reduce risk. Risk reduction contracts for wind tunnel tests and engineering simulation of handling quantities were awarded in the fourth quarter of FY 85. Competitive DEM/VAL contracts were awarded in November 1988, to two competing teams (Boeing-Sikorsky and McDonnell/Bell) to complete the preliminary design of the aircraft and mission equipment package, and demonstrate performance of the technologies which will be included in the LHX design. All these contractual efforts have focused on reducing risk prior to entering Full Scale Development. Key technologies for LHX have been successfully demonstrated within the past year. These include wind tunnel and pole testing of low observable LHX airframe models; brassboard demonstration of second generation focal plane array FLIR technology that will be included in the target acquisition and night pilotage subsystems; and verification of the 32 bit high speed processors integral to the VHSIC based system architecture.

LHX

QUESTION. General Shoffner, from an operators perspective, what are the trade-offs between getting Apache and AHIP now or spending the time and money to develop LHX? Which alternative do you prefer?

ANSWER. AH-64 Apaches are being procured for attack battalions in the heavy divisions and corps. The actual procurement number of AH-64's is dependent on the number of battalions of 15 AH-64 aircraft each that can be resourced against a total requirement of 56 battalions. Resourcing must include people, ancillary equipment and the training base, which results in the ability to field only 40 battalions (807 aircraft) today. LHX does not replace the AH-64 but rather satisfies the armed reconnaissance (cavalry) and attack requirement for light divisions. The AHIP and LHX both compliment AH-64 and increase its survivability. The AHIP, which is a modification of twenty year old OH-58A's, povides a low cost and effective transition until LHX to reduce the near-term warfighting risk. The LHX is the centerpiece of the Army Aviation Modernization Plan and allows us to counter the threat after the year 2000. AHIP does not have the growth potential against the future threat that would allow the Army to mortgage the future for the present. There must be a balance.

ARMY AVIATION MODERNIZATION PLAN

QUESTION: General Pihl, since the revised budget clearly revamps the Army Aviation Modernization Plan is the Army planning to redo the Plan? If so, when will a new version be made available to the Committee?

ANSWER: The Army is in the process now of redoing the Army Aviation Modernization Plan. We expect the Chief of Staff of the Army to sign the document this summer and after that it will be forwarded to the Committee.

ARMY HELICOPTER IMPROVEMENT PROGRAM (AHIP)

QUESTION. General Pihl, the revised budget terminates the upgraded scout program called AHIP. This is the second time in three years it has been proposed for cancellation. Given that the Defense budget had to be reduced by $10 billion, was it appropriate to terminate AHIP as a lesser priority system?

ANSWER. Yes sir.

QUESTION. Were there any technical problems which led to this recommendation?

ANSWER. No sir.

QUESTION. General Shoffner, I understand AHIP has been performing well in the field, has it lived up to its expectations in terms of mission reliability and capability.

ANSWER. AHIP field performance to date is outstanding. In addition to AHIP performing superbly at NTC and in Europe, the aircraft has also received high marks under actual combat conditions in the Persian Gulf and is still operating off USN ships there. All AHIP's deployed to the Persian Gulf are achieving the upmost in safety and maintenance standards with a cumulative mission capable rate well above the DA standard while flying in excess of 5,000 hrs.

QUESTION. The revised budget explains cancellation of AHIP on reassessed cost effectiveness. The request for AHIP in the original budget increased by 44% from 1989 to 1990. Is this cost increase the reason for the reassessment and its termination?

ANSWER. The increase in the original AHIP budget request over Fiscal Year 1989 was 73.8 million dollars or 36.4 percent. The majority of this increase was funding to implement an armed option, 28.1 million dollars and funding to implement retrofit of air-to-air stinger on previously procured aircraft, 21.1 million dollars. The remaining delta provided for improvements in the control display system and the mast mounted sight, incorporation of the Global Positioning System and initial funding to begin retrofiting the fielded fleet with these improvements. This cost increase was not the reason for the reassessment and subsequent program termination.

QUESTION. Is the LHX (light helicopter) program far enough along in development and doing well enough that we can afford to cancel AHIP now and count on LHX to fill its role in the future?

ANSWER. Yes, the LHX program is progressing extremely well. Competitive Demonstration/Validation contracts were awarded in November 1988 to two competing teams (Boeing-Sikorsky and McDonnell/Bell) for the conduct of preliminary design of the aircraft and mission equipment package technologies integral to the LHX design. Both contractor teams are progressing extremely well in their design process and are on course for achieving a 7,500 pound combat empty weight aircraft at $7.5 million unit flyaway cost (FY 88). The T800 engine development has proceeded smoothly on cost and schedule. The engine has met or bettered all performance, supportability and cost goals. In summary, the LHX program is moving successfully on its planned course that demonstrates high confidence that the FY 97 IOC will be met.

APACHE

QUESTION. General Shoffner, in 1988, the Army planned to buy a total of 593 Apaches but had a requirement for 1,031. In the FY 1989 budget the Army planned to buy 975. Now it plans to buy 807. Has the requirement for Apaches changed, or are the reductions in the revised budget due solely to fiscal constraints?

ANSWER. The reductions are an affordability issue. Procuring 807 Apaches was the best decision that would satisfy the Army's warfighting needs, provide a balanced Army Aviation Procurement Strategy and support the Army Aviation Modernization Plan.

QUESTION. General Shoffner, if the Apache is terminated following 1991, as recommended in the budget, what is the impact on Active force Apache helicopter inventories?

ANSWER. Two AH-64 Attack Helicopter Battalions will be eliminated for a total active force loss of 30 aircraft.

NATIONAL GUARD AND RESERVE

QUESTION. General Shoffner, can you tell us what National Guard and Reserve units will not receive Apaches as a result of the revised budget?

ANSWER. Two USAR battalions.

7 - 229 AHB V Corps
8 - 6 CAV VII Corps
Three National Guard battalions
1 - 135 AHB 35 MX
2 - 135 AHB 35 MX
1 - 140 AHB 40 MX

AH-64

QUESTION. General Pihl, according to the revised budget, the Army is no longer requesting a multi-year procurement for the Apache. Can you tell us why and what the impact is on unit cost?

ANSWER. The Army decided to terminate APACHE production after Fiscal Year 1991 for affordability reasons. Previously, the Army sought a 60 aircraft per year multiyear procurement for four years (Fiscal Years 1990-1993) at an average weapon system unit cost of $12.6 million. Fiscal Year 1990 and Fiscal Year 1991 single year procurement for 66 aircraft per year will be at a weapon system unit cost of approximately $14.0 million.

QUESTION. General Pihl, I understand the original budget did not provide enough funds to support a multi-year contract for 72 aircraft. If the program had not been terminated, would additional funds have been required to support a production rate of 72 aircraft.

ANSWER. Yes sir.

QUESTION. If the Army is planning to terminate the Apache program in two years, why should we continue funding it for the next two years?

ANSWER. Procurement of 66 APACHEs in each of the next two years would provide a total program of 807 aircraft which would field 40 battalions providing a sufficiently robust warfighting force.

QUESTION. What would be the impact if Congress terminated Apache in 1990 instead of after 1991?

ANSWER. Termination of APACHE in 1990 would result in a total program of 741 aircraft vice 807 aircraft currently planned. Fiscal Year 1990 termination would result in a force of 36 battalions vice 40. The production line would go cold in Fiscal Year 1992 vice Fiscal Year 1993.

155MM HOWITZER AMMUNITION

QUESTION. General Pihl, in FY 1990 the Army will switch to a new type of 155MM Howitzer ammunition called the "M864." The Army's plan calls for 240 thousand rounds to be procured in 1990 with 120 thousand to the lowest cost metal parts producer -- and then 120 thousand rounds to a higher cost producer to ensure we have a second source.

How much of a premium is the Army proposing to pay for this second source? Why does the Army not award the entire 240 thousand round procurement to the lowest bidder?

ANSWER. The premium the Army would have to pay, if any, is unknown at this time. Army has facilitized both Scranton AAP and Louisiana AAP for 120 thousand rounds per year. This action provides critical workload at both these GOCOs and, thereby, maintains a warm base at both plants. The out of pocket costs for the two plants may differ. However, the government has made a significant investment in the facilitization of the two plants and it is prudent to proveout both facilities to assure that competent production capabilities exist. In addition, the government must pay for many fixed overhead costs at both plants regardless of the workload level.

QUESTION. The Army budget proposes to bring this second source on for only one year -- the 1991 column of the 1990 budget proposes reducing to 120 thousand rounds of "M864" ammunition.

Why is the Army proposing to pay a premium for a second source to facilitize and produce "M864" ammunition for only one year?

ANSWER. The Army's intent was always to maintain two producers for the M864. Facilities at both Scranton AAP and Louisiana AAP are almost complete and fully funded. The Army will maintain a warm base at both facilities until budget constraints dictate otherwise. A rate of production of 120 thousand per year at each plant would sustain both GOCOs and utilize the funded facilities. The FY 1990 quantity was planned to allow both facilities to produce at the planned rate so that we would have proven production lines. The premium the Army would have to pay, if any, is unknown at this time.

QUESTION. Could you explain why the Army has elected to stop producing 155mm ADAM and RAAM ammunition that deliver mine fields?

ANSWER. A combination of budget constraints and Army mine program priorities required the Army to discontinue ADAM/RAAM production.

QUESTION. For the record, would you provide the advantages and disadvantages of "M864" ammunition vs. the "M483" round?

ANSWER. The M864 Baseburner DPICM (Dual Purpose Improved Conventional Munition) has 60% greater range than the M483A1 (DPICM). The M483A1 has 64 each M42 grenades and 24 each M46 grenades. The M864 has 48 each M42 grenades and 24 each M46 grenades. As a result there is a reduction in net effectiveness on target. The M864 is used at the higher zones of the propelling charges which combined with the basebleed feature provides the greater range. Lower zones can be accommodated with the M483A1.

AMMUNITION --- BUDGET PRIORITIES

QUESTION. General Pihl, most of the CINCs that have testified before this Committee have stressed the need for sustainability and adequate ammunition stocks. If the CINCs place such a high priority on ammunition, then why does ammunition procurement fall from $2 billion in 1989 to $1.7 billion in 1990?

ANSWER. A reduced Army procurement TOA led to difficult prioritization decisions in funding of Army programs. Available dollars were used to support near term readiness and essential sustainability and to continue modernization efforts, while eliminating procurement of less capable systems. The FY90/91 ammunition budget request fully supports worldwide training requirements and provides for modernization of selected war reserve inventories to enhance our warfighting capability. Modernization efforts include tank ammunition developed under the Armor Enhancement Initiative, the 155mm Baseburner artillery round, and the Volcano mine system, as well as ammunition to support fielding of new weapons systems. While war reserve funding is lower than in past years, we have strived to invest our ammunition dollars to realize the greatest return in capability on the battlefield. It should be noted that the budget request for missiles, which contribute to our overall munitions sustainability, increases by $70 million in FY90 and $412 million in FY91 over the FY89 funded level.

QUESTION. General Pihl, we have often heard from the ammunition community that they are concerned with the level of funding provided for inactive ammunition plants and industrial base. Army Operation and Maintenance (O&M) funds for the plants have often been reprogrammed for other programs.

Why does the Army not propose funding the support for these plants within the Ammunition Procurement account? Would this not place the Army component with the major interest in inactive plants in charge of maintaining these plants?

ANSWER. The Army study of alternative funding for the ammunition production base concluded that the major funding problem is in obtaining the approximately $30M-$50M per year necessary to maintain the inactive base. OSD is considering the alternative, proposed by Army, to move this funding from the Operations and Maintenance, Army (OMA) appropriation to the Procurement Ammunition, Army (PAA) appropriation. The Deputy Chief of Staff for Ammunition is the appropriation manager for PAA, and he is also ultimately responsible for maintenance of the base. This action will provide the stewardship necessary to ensure that the maintenance requirements are identified and funded consistent with other ammunition priorities.

OSD is also considering, as an alternative approach, transferring the entire OMA Industrial Preparedness Operations account to the Deputy Chief of Staff for Ammunition, but keeping it in the OMA appropriation. Rationale for this alternative is that it follows the traditional DOD approach to use the OMA appropriation for maintenance of real property and equipment.

OSD will provide a report to you in June 1989.

HEAVY FORCE MODERNIZATION PROGRAM

QUESTION. General Pihl, Congress last year denied requested funds for the new Armored Family of Vehicles (AFV) because the Army failed to demonstrate the program was affordable, feasible and militarily-justified. The Army now is developing a Heavy Forces Modernization program which raises the same questions, even though it is not as ambitious as the old Armored Family of Vehicles program.

What are the specific differences between the Heavy Force Modernization program and the Armored Family of Vehicles program which makes the new plan more affordable, feasible, and militarily- justified? What new cost effectiveness studies and technology risk assessments have been done to support your claims?

ANSWER. Heavy Force Modernization represents a major departure from the AFV study recommendations in terms of focus, affordability, and executability. The AFV study recommended fielding in excess of one division annually with up to thirty new systems. This revolutionary, unconstrained approach was high risk in execution and affordability. The Heavy Force Modernization Program carefully prioritizes its requirements for modernizing the heavy forces based on the future battlefield, our evolving doctrine, threat projections, the warfighting contribution of each potential system, the technology maturity associated with each system, and affordability within the projected Army TOA. Based on these factors, the six most vital systems were selected for fielding to the "first to fight" force, approximately one-third of the total force. The primary feature recommended by the AFV Task Force that has been retained is maximizing commonality to the extent that it is practical and smart without trading off required capabilities.

The AFV Phase I Report and TRADOC Mission Area Analysis revealed efficiency and effectiveness are enhanced through commonality. The Army is currently executing studies to prepare the Heavy Force Modernization Program for a Milestone I Defense Acquisition Board in 2Q90. These studies include a Baseline Cost Estimates, Trade Off Analysis, Trade Off Determination, Best Technical Approach, Human Factors Engineering Analysis, Cost and Operational Effectiveness Analysis, Cost and Training Effectiveness Analysis, and three separate Concept Exploration and Definition studies by independent contractors. You can expect a complete analysis package to support the Milestone I Decision.

QUESTION. **General Pihl, earlier this year, when the Army began informing Congress about the new Heavy Force Modernization plan, the Army said that the plan still was evolving and subject to change. Are the components, schedules and costs of the new program final yet? If not, how can Congress assess the validity of the program's funding request?**

ANSWER. **The six systems that comprise Package I of the Heavy Force Modernization Program are final. These are the Block III tank, the Future Infantry Fighting Vehicle (FIFV), the Advanced Field Artillery System (AFAS), and the Combat Mobility Vehicle (CMV) on a common heavy protection level chassis; and the Line of Sight Antitank (LOSAT) and the Future Armored Resupply Vehicle-Ammunition (FARV-A) on a medium protection level Bradley and MLRS chassis respectively. The schedules for these systems have been established and we are committed to maintaining those schedules.**

We feel we have projected the costs accurately to meet the established schedules for the Package I systems. The completion of the Best Technical Approach, Baseline Cost Estimate, Cost and Operational Effectiveness Analysis, and Cost and Training Effectiveness Analysis for the Milestone I DAB in 2Q90 will validate the costs associated with the program.

TANK MODERNIZATION

QUESTION. Last year, the Army indicated that its tank modernization program would focus on upgrades to the M-1A1. The Heavy Forces Modernization program appears to include the option of developing a virtually new tank. Why has the Army made such a fundamental change in direction in modernizing its heavy armor forces.

ANSWER. The Army tank modernization program in the near term continues to focus on product improvements to the M1. The M1A2, scheduled for production in the FY92 timeframe will incorporate significant improvements in lethality, survivability and fightability. The tank that follows the Abrams M1A2 may either be a third block improvement to the M1 or a new tank. The Army acquisition strategy provides industry with competitive opportunities to offer solutions in response to performance oriented RFP's; the Army will not dictate the design but will establish performance bands. [Deleted] the current chassis or a new tank, we need to start fielding such a machine by 1997 in order to overmatch the Future Soviet Tank [deleted]. The Milestone V Product Improvement Program apparatus of the DoD Acquisition Directive allows for timely fielding and causes the same level of oversight and DoD decision as a Milestone I new start. The benefit in using a Milestone V approach is the reduction in program documentation and the streamlining of the process by elimination of heel-to-toe development if a new start is imposed. The envisioned improvements to the Block III tank are: a new gun, autoloader, countermeasure technologies, advanced power pack, improved track and suspension, weight reduction (from 70 tons to a goal of 55 tons) and introduction of modular armor to improve survivability. Success of the Abrams M1A2 is key to development of the Block III. The following M1A2 technologies will be incorporated into the Block III tank: Standard Army Vetronic Architecture, advanced target acquisition, and positional navigation. Without M1A2 technology, cost and schedule risks increase for Block III.

HEAVY FORCE MODERNIZATION PROGRAM

QUESTION. General Pihl, the Army has been trying to develop a comprehensive Armor/Anti-Armor Modernization Plan for the past two years. The Army is requesting significant funds in FY 90 for armor/anti-armor modernization programs. However, the overall development and procurement plan still has not been submitted to Congress.

What are the emerging conclusions of this plan? How do they relate to specific programs requested in the budget? When will this plan be submitted so Congress can evaluate the budget request in a more informed manner?

ANSWER. The Armor Anti-Armor (A3) Modernization Plan was developed based upon the expected Soviet rate of modernization, from both a qualitative and quantitative perspective. The plan generally concludes that:

(1) The Soviets will continue to aggressively modernize their A3 capability. It is critical to realize that Gorbachev's "new political thinking" and initiatives are not inconsistent with improved combat readiness of Soviet land forces.

(2) The A3 force is not sufficient based upon the Army's normal quantitative and qualitative modernization strategy.

Execution of the A3 Modernization Plan and the programmatics which are already embedded within the FY90/91 President's Budget and FY90/94 Five Year Defense Plan produces an A3 capability significantly better than the current force.

We are still behind but execution of the A3 modernization plan will allow us to catch up, get ahead, and stay ahead.

The Armor Anti-Armor Modernization Plan was signed by the Chief of Staff, Army, on 12 May 1989. It is expected that the Secretary of the Army will transmit it to Congress before the end of June 1989.

LIGHT HELICOPTER EXPERIMENTAL PROGRAM

QUESTION. The Army has said that its new light armed scout helicopter, the Light Helicopter Experimental or LHX, must have an empty weight of no more than 7,500 pounds and a unit flyaway cost of no more than $7.5 million in FY 88 dollars. However, the General Accounting Office indicates that the LHX already is overweight, and one of the contractors admits his candidate is exceeding the cost limit.

General Pihl, weight growth and cost increases killed the last version of the LHX program the Army presented to Congress. How will the Army ensure that the current program does not exceed these critical performance and cost requirements? What is the Army now doing differently to keep LHX within weight and cost limits?

ANSWER. The LHX is not "overweight," nor does it exceed cost. The GAO report referred to an earlier and now outdated Government LHX conceptual design. A primary objective of the FY 89/90 Demonstration/Validation phase is for the competing/Contractor teams to conduct cost/weight/performance trade-offs to define the optimum combat effective and supportable LHX within program cost and weight requirements. These designs will be submitted to the Government with each team's Full Scale Development proposal in September 1990. The 7,500 pounds combat empty weight is an upper limit to be managed by contractual guarantees. Production and support cost commitments will also be included with the proposals. The level, depth, and firmness of cost commitments will be heavily weighted during source selection. The Government has already achieved cost, weight, and performance guarantees on the LHX T800 engine which met or bettered the established requirements. The Government and both Contractor teams have identified LHX designs that are within cost and weight requirements and that are combat effective and highly supportable.

QUESTION. General Pihl, the General Accounting Office reports that the Army is trying to meet its LHX weight requirement by adding "kits" containing needed capabilities after LHX has been deployed originally. GAO reports that as many as 1,900 of the 2,100 planned LHX will be kitted with such essentials as a radar jammer, high frequency radio, crew armor, and bullet fragmentation barrier.

ANSWER. At the time the GAO report was prepared, the Army's in-house conceptual design incorporated several combat kits whose cost and weight were allocated using the same methodology that the Army used for Apache and Black Hawk. That methodology stipulates if kitted items are not procured for every aircraft and/or utilized for only specific missions, environmental conditions, or battlefield threat conditions, they would not be included in empty weight or flyaway cost. However, the Army recently decided to require that the LHX combat empty weight include any kits that may be proposed by either industry competitor.

QUESTION. How many additional pounds will these "kits" add to the LHX, and what will be the degradation to helicopter performance from these additions? How many aircraft will be kitted? General Pihl, the GAO reports as many as 10-12 items could be added in kits to the LHX. How many aircraft will be kitted this way? How much will these additions add to aircraft weight and to total program costs? How will added total weight of all the kitted items degrade aircraft performance?

ANSWER. Kits will not add weight to the "empty weight" LHX nor degrade performance, since they will be included within the 7,500 pounds combat empty weight baseline. The basic configuration of each LHX aircraft is planned to be identical. Therefore, every LHX could accept the installation of a kit (e.g., blade de-ice, IR jammer, radar jammer) if any are proposed by either competing team. It is envisioned that if either team were to incorporate kitting in their design, the total weight of kits would not exceed 200-300 pounds. Again, this weight would be included in combat empty weight.

QUESTION. General Pihl, is it not true that the historical pattern for military aircraft development is to increase weight by five to ten percent?

ANSWER. Historically, many aircraft systems have experienced some weight growth through development and fielding. Generally, this weight growth has been due to the imposition of additional requirements and capabilities as the systems were developed and fielded over a period of years. The Army is fully cognizant of this historical pattern, hence the precedent for stringent LHX weight control. The LHX acquisition strategy requires contractually binding commitments from industry competitors for a combat empty weight system not to exceed 7,500 pounds. Additionally, the competing industry teams have design flexibility to conduct trade-offs in order to propose the most combat effective and supportable LHX configuration which meets program cost and weight requirements.

QUESTION. General Pihl, the LHX's Mission Equipment Package consists of the sophisticated computers, sensors, and weapons which give the aircraft its combat capabilities. Trying all these systems together to work successfully is a complex hardware and software challenge.

Is developing the LHX Mission Equipment Package a "high, medium or low" risk technical effort? How does the Army propose to overcome these risks?

ANSWER. The risk for the Mission Equipment Package is medium. The principal focus of the ongoing competitive Demonstration/
Validation (Dem/Val) phase is to reduce risk associated with the MEP. Approximately 75 percent of contract effort has been allocated to design and brassboard demonstration of the MEP technologies.

Risk reduction is being managed and funded to ensure program goals and performance requirements are met. The LHX program performance requirements are based upon integration of technologies that will be demonstrated on a schedule compatible with the LHX Dem/Val and FSD, the LHX will have demonstrated the technologies required to execute a successful FSD program.

ADATS VS, PMS SYSTEM

QUESTION. General Shoffner, the Congressional Budget Office (CBO) has suggested that the Army can cancel the ADATS program and accomplish the same mission, at much less cost, through proliferation of the Pedestal Mounted Stinger (PMS) system. General, from an operational point of view and in light of declining budgets, is this a workable solution to front line air defense requirements?

ANSWER. ADATS is the Line of Sight-Forward-Heavy (LOS-F-H) component of the Army Forward Area Air Defense System (FAADS). As such, it must protect the forward heavy combat units from air attack by the fixed wing and rotary wing threat, with particular emphasis on the attack helicopter. To provide this protection it must have the capability to engage and kill these targets in clutter and heavy countermeasures at stand-off ranges. Ongoing technical testing indicates that ADATS meets this requirement. All six of the last series of test firings have been successful. To provide the necessary protection to the force, ADATS must also be survivable in the forward area. Mounted on the M3 Bradley chassis, ADATS survivability will be equivalent to the mechanized force it supports. Unlike ADATS, Pedestal Mounted Stinger (PMS) was designed and procured as the line of Sight-Rear (LOS-R) component of FAADS where its primary threat target is the fixed wing attack aircraft and it is subjected to much less direct and indirect fire. As such the PMS is mounted on the High Mobility Multipurpose Wheeled Vehicle (HMMWV) which is far less survivable in the forward area and less mobile than the M3 Bradley.

AIR DEFENSE ANTI-TANK SYSTEM (ADATS)

QUESTION. General Pihl, there was a recent press report (Defense News, 24 April) which states that the Army is considering boosting the production rate of the ADATS fire units while deferring purchase of the majority of the ADATS missile until later years. Is this unconventional acquisition strategy being seriously considered by the Army?

ANSWER. No. The article actually cited one of the ideas generated in a cost reduction brainstorming session. The Army position is, as stated in the President's Budget, simultaneous production of fire units and their basic load of missiles.

QUESTION. General Shoffner, the Army is planning on connecting ADATS to different types of sensors to optimize its capabilities. What types of sensors will be used and where are they in the development and fielding plan? How operationally effective will ADATS be operating independent of remote sensors?

ANSWER. The FAADS concept is based on the premise that no single system can provide the requisite air defense in all areas of the battlefield. The roles of the LOS-F-H (ADATS) and the LOS-R (PMS) were discussed earlier. The third weapon in the FAADS family is the Non-Line of Sight (NLOS) component or the Fiber-Optic Guided Missile (FOG-M). As stated earlier ADATS will protect the forward mechanized and armored forces and PMS will protect the Division and Corps rear area assets. Both systems, however, require line of sight to the targets that they are engaging and cannot engage aircraft behind mask. The NLOS component will provide the capability to engage both aircraft and armored vehicles behind terrain mask. The fourth of the FAADS family is the C3I, which will tie all the individual pieces together and provide critical early warning to the individual fire units. Two key parts of the C3I are the FAADS Ground Based Sensor (GBS) and the Masked Target Sensor (MTS). The sensor which was selected in Non-Developmental (NDI) competition as the initial GBS was the AN/TPQ-36A, a variant of the already fielded Firefinder counter artillery radar, and the same radar currently used by Norway in their Norwegian Adapted HAWK (NOAH) system. The TPQ-36A, an active radar, is currently undergoing technical testing at White Sands Missile Range, NM. As part of the Pre-Planned Product Improvement Program (P3I), the TPQ-36A will be upgraded with other passive sensors, IFF, and/or NCTR devices. The MTS, currently under development on an airborne platform, will provide target data on targets in mask in relation to the weapons systems. The network of GBS and MTS systems will provide early warning and target queuing for the weapons systems. In the specific case of ADATS, these sensors can provide the early warning necessary to allow ADATS to prepare for engagement on the move, as well as allow the ADATS gunner to be positioned at the proper azimuth to acquire and rapidly engage attack helicopters as they unmask. Should ADATS be required to operate independently of the GBS/MTS systems, it has its own onboard radar, which in technical testing is proving very capable and reliable in heavy countermeasures. Furthermore, the ADATS platoon of four fire units has the capability to net sensors so that one ADATS can provide early warning for all four fire units. The P3I program for ADATS will incorporate emerging passive sensor technologies to enhance and complement the active radar. ADATS, therefore, is designed to make maximum use of the GBS/MTS network, but is also fully capable of providing the requisite early warning should the GBS/MTS not be available.

Question: General Sullivan. what are the Marine Corps front line air defense requirements and are they different from the Army's?

Answer: The USMC requires an appropriate mix of air defense systems to provide a defense in depth capability. Our F-18 aircraft provide the long range air defense. The Phase III Hawk provides medium. with the close in requirement being provided by Stinger. This mix of weapons must be provided with a satisfactory target detection capability and effective command and control. In this regard we share much commonality with the Army and have a good working relationship. Our present air defense systems are good and provide a firm foundation on which to build.

We have identified a number of deficiencies and we are working closely with the Army where possible to correct them. A prime example of meeting our requirement is the Pedestal Mounted Stinger. We are monitoring other portions of the Army FAAD program for their applicability to our needs and we see future utility in the Fiber Optic Guided Missile program.

We are committed to moving our Hawk system forward in the battle area, and we are studying ways to modify the system to significantly reduce its size while increasing mobility and firepower.

An exception to this commonality is our development of an air defense version of our highly successful Light Armor Vehicle (LAV). This air defense system will meet our requirement to provide highly mobile, armor protected, close in air defense to our maneuver forces.

Question: Are the Marines considering the purchase of the ADATS?

Answer: No sir.

QUESTION. General Pihl, the revised FY 1990 and 1991 budget submits reveal that the Army intends to reduce the ADATS program by $218 million over two years. Further, it is the Committee's understanding that the Army is under a firm fixed-price contract for the ADATS system. Do these reductions mean that these firm fixed prices are no longer valid and the entire contract will have to be re-negotiated?

ANSWER. The ADATS procurement request (MIPA including advance procurement and spares) was reduced from $429.6 million to $280.6 million in fiscal year 90, and from $393.8 million to $279.8 million in fiscal year 91 for a total reduction of $263.0 million. ADATS' fiscal year 90 RDTE request was increased by $20 million to fully fund required operational testing. This resulted in a total program reduction over the two years of $243 million. The ADATS contract contains five firm fixed-price production options. The reduction does, in fact, break the 90-91 options. The project office expects to receive a new proposal from Martin Marietta on or about September 1, 1989. After audit and negotiations, the project office expects to issue the contract modification by May 1990.

FAMILY OF MEDIUM AND HEAVY TACTICAL VEHICLES (FMTV & FHTV)

QUESTION. General Shoffner, the Army National Guard and the Reserves testified before this committee that shortages of 2 1/2 ton and 5 ton trucks prevent many units from being rated combat ready. The Committee also understands that the Active Forces are not in much better shape in serviceable medium trucks. With the amount of ammunition you expect to expend on the future battlefield and the fluidity of movement, how will we be able to support these increased transportation requirements?

ANSWER. The highly mobile warfare envisioned in Airland Battle (ALB) doctrine and the increased ammunition expenditures expected to be generated by modernized armor, infantry and artillery units requires an ammunition distribution system that is flexible and responsive to unit needs. Operation of a NATO Corps is projected to consume 15,750 STONS of ammunition daily, with 80% of this tonnage fired by artillery units.

Medium trucks previously authorized in armor and mechanized infantry units for ammunition distribution have been replaced by a larger truck, the HEMTT. The HEMTT with onboard MHE provides transport and rapid handling and eliminates the labor intensive, time consuming, and vulnerable ammunition distribution system at unit level.

Artillery ammunition distribution will be accomplished with the Army's new heavy truck, the Palletized Loading System (PLS). PLS, with a demountable cargo bed, represents a technological materiels handling equipment breakthrough and enables one soldier to load or unload the entire truck in only eight minutes. PLS will provide the flexibility and responsiveness needed to support ALB doctrine.

The HEMTT with onboard MHE, and the PS with a demountable cargo bed, significantly improve unit productivity, mobility and survivability by providing critical ammunition transport and rapid handling. PLS proved more productive and cost effective than the current system in support of ammunition distribution. The possibility of PLS employment in expanded roles, as repair parts distribution, medical and engineer unit applications, and supply and petroleum distribution, is being explored which may offer additional cost saving.

QUESTION. General Pihl, the first multiyear procurement award for the FMTV will be for 18,000 to 25,000 trucks. In light of the falling defense budget, is the Army reconsidering the affordability of the Family of Medium Trucks (FMTV)?

ANSWER. The Cost Operational Effective Analysis performed by the Army in support of the Milestone II decision clearly showed that buying new trucks (FMTVs) is more cost effective than maintaining old trucks. Therefore, every effort is being made to move forward with the FMTV program. Due to the falling defense budget, planned procurement has been scaled back to 18,000 trucks which is the minimum economic quantity for this type of vehicle production. Otherwise the FMTV program has been left intact. This attests not only to the affordability of FMTV, but also to the criticality of the FMTV in the Army's modernization plan.

QUESTION. General Pihl, the Committee understands that the Army is using a modified Non-Developmental Item (NDI) approach to the FMTV competition, stressing high commercial content with proven reliability. If this is the case, why will it take over two and one-half years to select a winning contractor team and award a production contract?

ANSWER. The FMTV program is the most complex of the three types of NDI programs consisting of an assemblage of commercial or modified commercial components. Therefore, fourteen months has been provided to the prototype contractors to complete their system engineering to integrate their selected components into truck designs and then build and deliver prototypes for tests. Evaluating the prototypes as part of the competitive run-off involves a considerable amount of testing to ensure that the evaluation is complete and equitable. Testing is scheduled to take 12 months. The remainder of the schedule time is spent in the normal source selection process governed by procurement regulations.

QUESTION: General Franklin, does the Marine Corps have similar problems with overage 2 1/2 ton and 5 ton trucks?

ANSWER: Yes, to a lesser extent. With the exception of Marine Corps special purpose vehicles, the Marine Corps has phased out the M44 series 2 1/2 ton vehicles in favor of the M809 series and M939 series 5 ton chassis. 2 1/2 ton Chassis still in service are as follows:

M530CB Brush Firetruck

M530CS Structural Firetruck

M49A2C Fuel Tanker

M50A2 Water Tanker

M109A3 Shop Van

All of the vehicles listed above are becoming more difficult to operate and maintain due to their age and poor availability of repair parts.

Due to fairly recent procurement of the M939 series 5 ton truck and an extensive rebuild/retrofit program, the Marine Corps' 5 ton Fleet is in considerably better condition than our 2 1/2 ton Fleet.

QUESTION: **General Franklin, is the Marine Corps participating in the FMTV Program with the** Army?

ANSWER: **Yes. The Marine Corps has voting member status on the Test Integration Working Group as well as other scoring conferences pertaining to the Family of Medium Trucks (FMTV). Marine Corps peculiar tactical vehicle requirements, such as a 60 inch Fording capability and International Standards Organization standard cargo beds, have been included in the Test and Evaluation Master Plan and will be added to the specifications for the upcoming procurement contract. Additionally, Marine Corps Research, Development and Acquisition Command and U.S. Army Tank and Automotive Command representatives are involved in discussions to resolve the issue of vehicle compatibility with U. S. NAVY amphibious ships. Representatives from Marine Corps Research and Development Command and Marine Corps Logistics Base, Albany recently attended three FMTV Integrated Logistics Support conferences with the Army. Current Plan for Marine Corps procurement of the 5 ton version of the FMTV call for a buy of 10,000 vehicles over the course of 5 years (2,000 per year) beginning in fiscal year 1997.**

TACTICAL WHEELED VEHICLE MODERNIZATION PLAN

QUESTION. "Does the current FMTV procurement objective include fielding to all National Guard and Reserve units?"

ANSWER. Yes. The recently approved Tactical Wheeled Vehicle Modernization Plan establishes a combined procurement objective for FMTV (2.5 ton and 5 ton trucks) at 120,784 vehicles for the total force. This procures assets sufficient to field Force Package I (Forward Deployed units) to 100% fill, and Force Packages II & III (CONUS based units, all components) to a minimum of 70% fill.

ARMY TACTICAL COMMAND AND CONTROL SYSTEM (ATACCS)

QUESTION. General Shoffner, the Army is acquiring what is described as a system to integrate the five battlefield functional areas for command and control -- the Army Tactical Command and Control System (ATCCS). Could you explain how this complex of systems will assist you in managing the battlefield?

ANSWER. The Army Tactical Command and Control System is a system of systems which together provides the force commander with a common picture of the battlefield. ATCCS consists of five interoperable Battlefield Functional Area (BFA) systems:

Maneuver, Fire Support, Air Defense, Intelligence, and Combat Service Support. The BFA's are interconnected using one or more of the three supporting communications systems: Mobile Subscriber Equipment (MSE), Single Channel Ground and Airborne Radio System (SINCGARS), and the Army Data Distribution System (ADDS). These systems provide the commander with current locations of his forces, enemy locations, targeting information, status of equipment and supplies, and much more information which assists him in accurately assessing the situation. The timely, common picture of the battlefield provided by ATCCS allows the commander to more accurately assess the situation and determine a course of action that exploits his force's strengths and the enemy's weaknesses in such a manner that he can fight outnumbered and win. In addition to this direct impact on warfighting, ATCCS will allow the commander to better manage his assests because of the automated and realtime distribution of information among the BFA's. An example of this is that the ammunition officer will have the ammunition status within the force and can redistribute or resupply ammunition without requiring manual requests from the combat forces. This management of assets provides the commander with another method by which he can influence the situation.

QUESTION. General Pihl, would you please explain why the Army has requested FY 1990 procurement funds for seven C3 systems when only two, MSE and MCS, have completed initial operational test and evaluation?

ANSWER. FY 1990 procurement funds have been requested for the other C3 systems in order to modify software, support an IOT&E, or to satisfy an urgent requirement:

a. AFATDS: AFATDS has requested FY90 procurement funds to implement the Multiple Launch Rocket System (MLRS) software in the DoD standard Ada language which can be used on ATCCS hardware. With MLRS currently in procurement, PM AFATDS is in the best position to direct this effort.

b. CSSCS: The requested FY90 procurement funds will be used to obtain required software interfaces between CSSCS and the Maneuver Control System. These interfaces will provide the interoperability between the maneuver and logistics functions on the battlefield.

c. ASAS: The ASAS Limited Capability Configuration-Europe (LCC-E) is being obtained with FY90 procurement funds as a Limited Procurement (Urgent) in response to an Operational Need Statement from the Commander, US Army Europe.

Delivery of the LCC-E will start in FY92. ASAS will have IOT&E in FY91, with a production decision in 2QFY92.

d. SINCGARS and EPLRS: FY90 procurement of SINCGARS and EPLRS is for Low Rate Initial Production before IOT&E, and will provide assets required for operational testing.

QUESTION. General Pihl, one of the hardest development efforts to manage is one that requires extensive integration — like ATCCS. I understand that the Army has only recently established a systems integrator for the ATCCS. Without a systems integrator do you not run the risk of getting five separate systems rather than the envisioned single integrated one?

ANSWER. The Army Tactical Command and Control System (ATCCS) System Engineering and Integration (SE&I) effort will focus on the

Army's need to transition from five independently developed or emerging Battlefield Functional Area (BFA) Systems/requirements to an integrated ATCCS. The Program Executive Officer, Command and Control Systems (PEO CCS), an Army Major General, is in the process of awarding a contract for the SE&I effort. Award is anticipated for 4QFY89. Original planning called for PEO CCS to actually perform the SE&I function. After congressional recommendation and additional review, it was decided that a contract effort was more appropriate and would improve system integration.

Use of common hardware and software provides the foundation for an integrated ATCCS. In order to ensure integration, a block by block approach will be utilized starting with presently fielded systems such as MCS and Limited Capability Configuration (LCC) ASAS. As each additional nodal system (CSSCS, AFATDS, FAADC2) completes its development and is fielded, these systems will be integrated into ATCCS and will eventually evolve into the objective ATCCS.

QUESTION. General Pihl, the Enhanced Position Location Reporting System (EPLRS) has been delayed — FY 1987, 1988, and FY 1989 funds appropriated for EPLRS, a total of $200 million, have not yet been obligated. However, you have requested $48.8 million in FY 1990. Since the FAAD C2I program, the major user of EPLRS, has been reduced in the Bush amended budget due to development delays, why are these additional funds required?

ANSWER. The Army is currently reassessing the competing requirements to field EPLRS in support of FAAD C2I and to demonstrate corrections to reliability and net management problems encountered during the recent EPLRS technical test and operational assessment. Additional "test, analyze and fix" efforts will be needed, similar to the approach which was successfully used in MSE. This approach is now being integrated into a modified, low government risk FY89 contract award which will provide upgraded EPLRS for full operational test. This effort will require prior and current year funding. The total requirement for FY90 funding is still being determined. Our intent is to notify Congress just as soon as the details of the modified EPLRS acquisition strategy are worked out and the FY90 funding requirements are known.

QUESTION. General Shoffner, would you explain to the Committee how requirements for communications equipment are calculated?

ANSWER. The overarching process for identifying and validating requirements and for acquiring the capabilities to satisfy those requirements is the Concept Based Requirements System (CBRS). This system integrates the functional areas of doctrine, training, force structure and materiel into a process that answers the Army's questions of how to fight and what equipment to use to fight. The CBRS is a three phased process that evolves through stages related to (1) concept development, (2) identification of deficiencies, and (3) correction of deficiencies.

For communications, this process involves the identification, verification, and validation of information exchange requirements. The key players in this effort are the Combined Arms Center (CAC) at Ft Leavenworth, the U.S. Army Signal Center (SigCen) at Ft Gordon and the Battlefield Functional Area (BFA) proponents at various schools and centers. Voice and data requirements were validated and consolidated into the SigCen's Communications Data Base.

CAC and SigCen share responsibility for communications "burden assessment", a task that entails not only the identification and validation of information interface requirements, but also determination of the impact of those requirements on known resources. Along with the BFA proponents, CAC and the SigCen are also responsible for addressing any resultant shortfalls by initiating appropriate action for the reallocation of resources, changes in doctrine, enhancement of equipment, acquisition of new devices, etc.

QUESTION. Do you support the same readiness requirements for communications equipment that you do for ordnance?

ANSWER. Yes.

QUESTION. General Shoffner, the Reagan budget reduced funding for the joint TRI-TAC communications system designed to support echelons above the Corps. The amended budget reduced two additional communications programs, delaying procurement of some SINCGARS radios and for two divisions worth of Mobile Subscriber Equipment.

- Do these reductions reflect changes in the communications requirements or simply deferrals of the procurement?

ANSWER. The Army will always have more requirements than it can satisfy. However, we must do the best we can within the constraints given us. As a result, the Army had to make some tough decisions and defer some of the procurement for our communications requirements.

AMMUNITION MEASUREMENTS

QUESTION. General Pihl, it is sometimes difficult for us to understand why the Army's ammunition situation has not improved. The Commanders in Chief are continually telling us that "days of supply" are too low.

Now, it seems as though changes that are going on with the Soviet threat should improve our situation. Secretary General Gorbachev has announced that he will remove 10,000 tanks and 6 divisions from the Warsaw Pact. With fewer divisions and tanks to fire at -- our days of supply should be increasing. But your staff has told my staff that a reduction in Soviet forces and tanks will have no impact on days of supply.

Is that correct? If so, why does it not have an impact? Are your requirements based on the threat or simply rates of fire?

ANSWER. Yes, it is correct. Days of Supply calculations are based on our system density (combat shooters) times the days in theater times a rate for a specific time period. The rate is determined based on a simulation which takes into account capabilities and doctrine of the threat.

QUESTION. Since the Army proposes deactivating a brigade at Fort Carson, and it deactivated a brigade at Fort Lewis last year, should not this reduction in force structure improve our days of supply because the Army has fewer artillery units to fire ammunition?

ANSWER. The deactivation of the brigade at Fort Lewis and the proposed deactivation of a brigade at Fort Carson will decrease the total artillery structure by 42 tubes. This is about 1.5 percent of the force structure. The resulting increase in incremental days of supply for artillery fire support is less than one day.

ADVANCED ANTI-TANK WEAPONS -- HEAVY AND MEDIUM

QUESTION. The Army's program to develop an advanced, heavy anti-tank weapon has experienced technical problems. Development and testing of the hypervelocity missile for such a system has been delayed. Also, a draft report from the General Accounting Office—indicates that some parts of the overall program are high risk, and that accurate total program costs are unknown.

General Pihl. what are the problems with the hypervelocity missile and how are they affecting the costs and schedule of the Advanced Antitank weapons program?

ANSWER. The HVM Joint Services Program completed in May 1989, after firing four of the six scheduled ARMY/USMC configuration missiles. During the firings, the test guidance control set suffered from reliability problems and poor Forward Looking Infrared (FLIR) and tracker performance. Since the AAWS-H Kinetic Energy Missile (KEM) program had already contracted an advanced FLIR/tracker design to replace this equipment, the decision was made to provide the remaining ARMY/USMC missiles to the follow-on effort.

These problems resulted in necessary changes as listed. Additional work in the theoretical simulation data base, major changes to the fire control system design, additional testing to confirm the improved FLIR/tracker performance, change to a minimum smoke propellant, and change to more complex test range equipment. Net effect of these changes on the program is a a cost increase of $ 9.0M and a schedule slip of approximately six months.

QUESTION. What parts of the overall program are high risk, and how does the Army intend to overcome these risks?

ANSWER. The areas of high risk are: schedule and technical. The program schedule is considered high risk due to the aggressive acceleration directed by both the Congress and OSD. [Deleted] [deleted] [deleted]. The KEM provides a leap ahead technology that will overmatch any projected enemy armor capability. To provide intensive management of this key effort, the Army has made this a separate program, now designated Line Of Sight Antitank (LOSAT).

QUESTION. When will the Army have a valid cost estimate of the total program costs?

ANSWER. Our most recent cost estimate of R&D costs were provided to the GAO in February 1989. Within that document we stated that in accordance with statutory and regulatory requirements, a validated cost estimate for Production and O&S costs will be provided to the Congress six months prior to entry into Full Scale Development.

QUESTION. General Shoffner, The Army is develoing an advanced medium anti-tank weapon to replace the Dragon missile. It will soon award a full scale development contract for the new system. Principal considerations in developing such a new weapon system are that it stay within required weight and cost goals so that a single trooper can carry it and so that the Army can afford enough of them.

What assurances do you have that the winning design for full scale development of the advanced medium antitank weapon will stay within the critical weight and unit cost requirements? What step is the Army taking to keep the weapon within these requirements?

ANSWER. Currently our projected tactical weight is three pounds below the requirement so design margin does exist. To ensure that we meet the requirement, we constantly monitor the contractor's progress and projections in this area. Furthermore the weight of the system has been established as a threshold requirement; i.e., the Project Manager is required to report to the Army and OSD at the first sign that this requirement cannot be met.

In the area of cost control, the acquisition strategy has been tailored to keep the cost of the system under control. As part of the FSD proposal submission, the contractor was required to submit not-to-exceed (NTE) prices for the first two low rate production buys. These prices can only be negotiated downward. At the end of buy two we will have two fully qualified producers of the system and will compete the remaining buys awarding the shares based on contractor prices. Experience (e.g. HELLFIRE) has shown that strategy will greatly aid in reducing costs. To sum up, the Army is using firm priced options for the first two buys and competition for the remaining buys to meet our cost goals.

QUESTION: What cost savings result from the Marines buying the Advanced Medium Anti-Tank Weapon and terminating the Dragon III?

ANSWER: The cost savings/cost avoidance resulting from the termination of the Dragon III is as follows:

a. $21 million of research and development funds were programmed but not expended.

b. $18 to 20 million for an estimated cost overrun was not paid.

c. $39 to 41 million is the total research and development savings cost avoidance.

d. $259 million of Procurement Marine Corps Funds were not expended. These funds will be applied towards the $715 million Advanced Anti Armor Weapons System-Medium (AAWS-M) procurement costs.

The cost of terminating the Dragon III Contract will not be finalized until March 1990.

QUESTION: In what fiscal years will those savings be realized?

ANSWER: Specific funds by fiscal years of Dragon III cost savings/cost avoidance are as follows:

a. Research and Development funds saved/cost avoided.

		($M)		(FY not determined)	
FY89	FY90	FY91	FY92	Cost Overrun	Total
5.48	10.9	3.7	1.0	18-20	39-41

b. Procurement Marine Corps funds saved/cost avoided.

($M)

FY92	FY93	FY94	To Complete	Total
Deleted for Dragon III				
24.7	66.5	55.7	111.8	258.79
Inserted for AAWS-M				
00.0	66.5	80.4	568.1	715.0

TOW

QUESTION. The revised budget adds $31.3 million to FY 90 request to accelerate completion of research and development on the increased lethality warhead for the current TOW 2 heavy anti-tank guided missile. This increase is in addition to $20 million already added in FY90 for related TOW 2 improvements. What new information justifies this latest addition of funds? What R&D progress has occurred recently to enable the program to absorb such large, previously unplanned increases without waste and inefficiency?

ANSWER. First, the $31M added to the TOW RDT&E line in the revised budget was taken out of the TOW modification line. We did a push a round to get the funds in the right place. [Deleted]
[deleted]
[deleted]
[deleted] [deleted]. Unlike the fly-over/shoot-down TOW 2B warhead which will be used on new production missiles; [deleted] alternate TOW 2B warhead will be for retrofit of 42,000 fielded TOW 2 missiles. The retrofit will be conducted in accordance with the TOW retrofit plan recently provided to Congress. The alternate TOW 2B development effort (FY89 to FY92) is a modification to the TOW 2B R&D contract but in all other aspects is a stand alone development. To reduce risk, we have two contractors pursuing different warhead technologies; at the end of the first year of development we will conduct a shoot off and will down select to the preferred warhead technology.

Recent R&D programs conducted by the MICOM Research, Development, and Engineering Center, the AAWS-M alternate warhead effort, and DARPA have shown the potential [deleted]

[deleted]. These results make the Army confident that the alternate TOW 2B program objectives can be met.

ARMY'S CHANGED MODERNIZATION STRATEGY

QUESTION. General Pihl, your statement says the Army needs to modernize its "first to fight" units every five to six years to maintain a qualitative edge over Soviet ground forces. Thus, every five to six years the Army also needs to have technology packages ready for systems development, and new or significantly improved systems ready for full scale engineering development.

In the recent past, however, the Army has taken 10-12 years to research, develop, and produce a new attack helicopter, a new tank, and a new infantry fighting vehicle. What will the Army do differently in the future to cut in half its normal acquisition cycle?

ANSWER. Within the bounds imposed by the Planning, Programming, Budgeting and Execution System (PPBES), we have made several significant changes which will produce tangible results in terms of transitioning technology to fielded systems more rapidly, and do so within affordability constraints. We have developed an acquisition strategy that has as its foundation the fielding of new, more capable systems to the "first to fight", with no intention to field the entire force with these same systems. In this way our best equipped forces will fight the threat's best, and later arriving forces will fight the threat's later arriving, and less capable, forces. In this manner, we will modernize the force in thirds every 5-6 years, and systems displaced by newer ones will flow down to the next force level. We have endorsed a key recommendation of the 1987 Defense Science Board Summer Study on Technology Base Management, which criticized the DoD and industry for slowness in transitioning technology to products and systems. Following their recommendation, we will use Advanced Technology Transition Demonstrations (ATTD), in lieu of the more costly and time-consuming traditional heel-to-toe process that used full scale prototypes in a demonstration/validation phase. ATTDs focus on areas of risk and demonstrate the technical maturity and operational potential of advanced technologies to support system milestone decisions. The Army's modernization plans have provided a much needed methodology for focusing and harnessing the technology base. With objective systems and time lines established, we are now able to better align and accelerate development and demonstrations of advanced technologies. The HFM Plan provides for a disciplined evolution of the tank as well as critical companion systems. These systems will use common chassis and components to the maximum extent possible, so that systems operating in the same part of the battlefield will have comparable survivability and mobility, and they will be less costly to procure, operate and maintain than systems developed independently. The common chassis and components, once they have been demonstrated for one system, will not need to be developed and tested over and over for subsequent systems, thereby saving time and money. In the management arena, we have made a departure from business as usual by giving the Program Executive Officer (PEO) for HFM control of the technology base funds that are directly related to his mission. This action gives the PEO the authority, responsibility and resources to fully develop the HFM Package 1 systems. In sum, the Army has made several fundamental changes which I believe will put us in a very sound position relative to the 1985 DSB recommendations on Armor Anti-Armor and the 1987 DSB recommendations on Technology Base Management.

INVENTORY REQUIREMENTS

QUESTION. One year ago,the Army reported that its inventory requirements for certain major equipment were as follows:
-- BLACKHAWK HEAVY UTILITY HELICOPTERS 2,253;
-- APACHE HEAVY ATTACK HELICOPTERS 863;
-- M-1/M-1A1 MAIN BATTLE TANKS 12,061;
-- M2/M3 BRADLEY FIGHTING VEHICLES 14,122;
-- MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) 1,381.
General Shoffner, what changes have occurred in these requirements since last year? Were these changes driven by reduced budget resources or by altered operational requirements?

ANSWER. The Army has carefully examined its budget to ensure that current warfighting capabilities are preserved. The inventory requirements for Blackhawk and MLRS remain unchanged. Two inventory requirement changes have been driven by altered operational requirements. They are the M-1/M-1A1 Abrams Main Battle Tank and the Bradley Fighting Vehicle, where an assessment of the Army Acquisition Objectives for each is on going. An approved recalculation of the Bradley procurement objective, to 8811, has occurred in the interim. This recalculation is primarily due to the improved performance of the vehicle which reduce the War Reserve requirement. The Abrams procurement objective, pending final approval, for the M-1/M-1A1 also changed, to 10,224. This recalculation reduces War Reserves primarily due to the increased survivability of the M-1A1. An inventory requirement change that was driven by reduced budget resources is the Apache. The program (increased at one time to 975) has been rescheduled to 807 from the 863 originally planned. The objective of 807 was driven by affordability of the Army Aviation Modernization Plan. The plan, with LHX as the centerpiece, provides a balance between the production of more of what is on hand today. While at the same time, being able to meet and defeat the threat of the mid-1990's. It is the Army's position that the Apache decision is a prudent balance of existing programs with new ones.

QUESTION. General Shoffner, what are the operational impacts of these changes on the Army's ability to conduct high intensity combat operations in NATO Europe, Northeast Asia, and Southwest Asia?

ANSWER. Recalculation of the inventory requirements for the M-1/M-1A1 and the Bradley Fighting Vehicle have no operational impact. Based on the reduction in Apache (AH-64s), OSD directed the Army to eliminate seven Attack Helicopter Battalions from the force structure. The breakout of the seven battalion reduction is three to the ARNG, two to the USAR, and two to the Active Component. The Army is in the process of identification of the actual units. The Army's position is to ensure a balanced warfighting capability for all theaters of operation.

ANTI-SATELLITE (ASAT)

In the revised budget, the Army was assigned the management responsibilities originally given to the Navy for developing new ground-based and sea-based anti-satellite rockets based on technologies developed in the Strategic Defense Initiative (SDI) program.

QUESTION. General Pihl, how will the Army implement an anti-satellite (ASAT) weapons program which does not sacrifice the needs of the Navy? How will it structure an ASAT program which works effectively with the SDI program to avoid duplicating already accomplished?

ANSWER. The Army has established a Joint Service Program Office for the surface-based kinetic weapons development effort at Huntsville, Alabama. The Navy has provided the Deputy Program Manager for this effort. The Navy retains within that organization the responsibility of developing the sea-based option for the ASAT program and is an integral part of the process for development of all needed program documentation leading up to a Milestone 1 decision, currently scheduled for Dec 89. Additionally, the Navy Space Command is a component of the Unified Space Command who is the proponent for the ASAT requirement. Navy operational concerns are adequately addressed through the CINCs close involvement in the review process.

QUESTION. General Pihl, what are the unique capabilities and experience the Army has in developing anti-satellite weapons which make it better-qualified than the Navy or the Air Force to lead the currently proposed non-laser ASAT program.

ANSWER. The Army has had extensive experiences in the development of Kinetic Energy (KE) weapons. [Deleted].

QUESTION. General Pihl, the Air Force has been assigned responsibility to develop the battle management and command/control/communications (C3) systems required for the anti-satellite weapons. How will the Army work with the Air Force to ensure that the weapons it is developing will work together with the battle management and C3 systems being developed by the other service?

ANSWER. As an important part of the Army lead Joint Program Office the Air Force has the responsibility for a single comprehensive space surveillance and battle management system to control all ASAT capabilities. They are responsible to the Program Manager for coordinating the integration of those elements into all Service related systems. There will be several joint service panels and working groups to ensure that these efforts remain in sync.

QUESTION. General Pihl, as program leader, how will the Army ensure that the Navy's anti-satellite weapons and battle -management/C3 systems will be compatible with the battle management/C3 systems being developed by the Air Force?

ANSWER. The key to ensuring that there are no conflicts in the development of the BM/C3 system and sea based and/or ground based deployment options is that since the Air Force is the only developer of the overall space control BM/C3 system, close coordination between the USAF and the KE ASAT BM/C3 team will than take place within the Joint Service Program office. As lead service and program manager for the overall ASAT development, the Army is responsible for all aspects of the system. For clarity, there are no Navy, Air Force, or Army ASAT systems, there is one DoD ASAT system being contemplated to [deleted].

QUESTION. General Pihl, significant sums already have been spent to develop the SDI interceptor rocket technologies, the Navy's vertical launch system technologies, and the Air Force's space battle management/C3 technologies. Why is it necessary to spend more than $500 million in FY90-94 to develop these new anti-satellite weapons capabilities?

ANSWER. While it is true that the DoD intends to leverage SDI technologies to assist in the development of an ASAT capability, there is a significant amount of work yet to be done to make it an effective hardware and software system. For example, booster technology is not part of this technical transfer and it represents a significant developmental effort. The technology will be used differently for ASAT and must be tailored to the ASAT mission, both for hardware and software. The hardware and software development is still necessary. The same can be said for the BM/C3 efforts, because while significant work on a top level space control BM/C3 system has been done, the ASAT unique software/hardware necessary to interface it within the overall system has yet to be developed. What is significant is that without leveraging off existing technology, the cost and time necessary to develop and field an effective ASAT would be much greater.

MULTIPLE LAUNCH ROCKET SYSTEM TERMINAL GUIDANCE WARHEAD

QUESTION. The General Accounting Office indicates that independent cost analysis in the Office of the Secretary of Defense (OSD) believe the Army's cost estimate to produce a Terminal Guidance Warhead (TGW) for Multiple Launch Rocket System (MLRS) rockets may be understated by as much as 50 percent. There also is evidence that the weapon will not satisfy U.S. requirements.

General Pihl, does the MLRS Terminal Guidance Warhead suffer from major cost and performance problems? If the weapon can satisfy U.S. requirements, why is the Army considering initiation of a new, alternate warhead development program for MLRS-TGW?

ANSWER. I first need to point out that the TGW program is in the earliest stages of R&D and is not scheduled to enter full scale development until 1992. Nevertheless, we are monitoring the cost and performance of that program very closely.

I believe that the OSD study that you referred to assumed that the system would be taken into production using the technology that is being used in the current R&D program. Consistent with the findings of that study, the Army has a very strong Producibility Engineering Program (PEP) with the purpose of reducing program costs as the system transitions into production. Additionally, as part of an overall Department of Defense effort, the Army is evaluating the incorporation of Very High Speed Integrated Circuit (VHSIC) and Millimeter Wave Integrated Circuit (MMIC) technology into the program to further reduce costs.

With regard to performance, it is true that the United States had some concerns about the growth potential of the system in terms of lethality; however, recent testing of the lethal mechanism developed by the consortium has alleviated our concerns in this area. Therefore, we plan to incorporate the existing lethal mechanism into the tactical design.

QUESTION. General Pihl, two Cost and Operational Effectiveness Analyses (COEA's) are underway which could alter significantly the Army's plan to equip the Multiple Launch Rocket

System with Terminal Guidance Warhead. The first analysis compares the Terminal Guidance Warhead to alternative approaches for rockets to defeat Soviet armor. The second analysis compares the Multiple Launch Rocket System with the Army's other deep strike systems, such as the new Army Tactical Missile System.

Is it prudent to continue development of the rocket Terminal Guidance Warhead (MLRS-TGW) if the outcome of these cost and operational effectiveness analysis could indicate there are better fiscal and military alternatives?

ANSWER. It is very prudent to continue the development of of TGW. First, concerning the MLRS and the ATACMS, those systems perform two different missions. They do not compete with each other, but rather complement each other. The MLRS supports the extended close battle--out to about 40 kilometers; the ATACMS supports the deep battle--beyond the range of MLRS. There is a need for both an MLRS anti-armor system to support the Brigade and Division Commander and a deep battle anti-armor system to support the Corps Commander.

The Terminal Guidance Warhead submunition is a candidate for not only the MLRS but also the Block II or deep battle anti-armor missile system. Another candidate is the Infrared Terminally Guided Submuntion for which the Congress provided funds last year. Both submunitions perform essentially the same function but with different seeker technologies. Our intention is to carry the candidate submunitions through the same level of development, and then decide from among them, which one we will put in each carrier. These technologies are not sufficiently mature to make this decision now; therefore, we will make this "neck-down" decision in fiscal year 1992 after each has completed its demonstration/validation phase of development.

QUESTION. General Pihl, how and why, did the Army restructure the MLRS-TGW program? What impact did this have on the date when the system would be operational?

ANSWER. The Army restructured the program in the Fall of 1988. Prior to the restructure, the Army planned to begin Low Rate Initial Production efforts concurrently with Full Scale Development. Because of the technical challenges remaining in the program, to include the introduction of PEP and state of the art integrated circuitry that I referred to earlier, the Army decided to eliminate the concurrency in order to reduce overall programmatic risk. This has delayed the scheduled fielding of the system by approximately two years.

QUESTION. General Pihl, the Army has issued a draft statement of work for an alternate warhead program for the Terminally Guidance Warhead. Does the Army's FY 1990-94 budget plan include funds to develop and field this alternate warhead? If not, can the MLRS-TGW meet Army requirements?

ANSWER. As I pointed out earlier, our concerns in this area have been alleviated by the recent successful testing of the lethal mechanism developed by the constortium. The Army had prepared a draft development plan and statement of work in the event that these tests weren't successful; however, they have now been withdrawn since the lethal mechanism meets U.S. requirements. There is no funding in the budget for an alternate lethal mechanism development.

QUESTION. General Pihl, the General Accounting Office indicates that the MLRS-TGW program may be underfunded in Army plans by $4.3 billion through completion, even after reducing procurement in half. Is this true?

Are we facing a major cost increase in this program in the future?

ANSWER. The GAO estimate was based upon the Army's initial planning estimate of 24,000 rockets. Funding for this program was reduced in the Army's long range planning annex pending the development of the total requirement for the system. This "shortfall" is really invisible to Congress since it occurs in the years beyond FY1994. The program will be fully funded if and when we decide to take it to production.

JUSTIFICATION

QUESTION . Gen Shoffner, in the FY 89 Authorization Bill, Congress directed the Army to "select an interim infantry antitank weapon from among the Milan II weapon, the Bofors BILL weapon, Dragon Generation II weapon, and the Marine Corps Dragon Generation III weapon". From an operational point of view, can you enlighten the comittee as to the advantages and disadvantages of each of these systems?

ANSWER . The Army evaluated all of these systems from an operational standpoint. Dragon GEN III has been terminated, so I shall address the others. Let me first note that we consider missions, threats to be countered, timeframes, and forces to be employed and sustained. Operational effectiveness - which includes such factors as lethality, survivability, suitability for employment by various units, and countermeasures performance - was examined in view of the above. It is also important to note that the Army assessment is based on a broad range of tests and evaluations, as well as field experience.

To begin with, in the area of lethality, our tests reveal [deleted]. BILL's advantage, on the other hand, is related primarily to a better probability of hit than either Milan or Dragon and to its ability to avoid some, but not all, reactive armor as it flys over and shoots down at an angle. The bottom line in lethality, however, is that despite slight variations in determining specific probabilities of kill used in various evaluations, all of these system possess only marginal lethality vs current threat tanks and will be clearly inadequate vs. the threat anticipated in the early-mid-90's.

Concerning survivability, the threat to each of the alternative systems from direct tank and machine gun countfire and from indirect artillery and mortar fires was considered. All three systems have comparable visual profiles, launch signatures and require the gunner to guide the missle to its target. However, BILL and Milan have increased range and faster missiles which provide the advantages of increased standoff vs. the target and reductions in the time the gunner must guide the missile. Because none of the systems can be fired from enclosures (buildings, bunkers, etc), none has a distinct survivability advantage vs. the effects of threat indirect fire.

Operational suitability may be viewed as the ability of a unit to effectively utilize the system to accomplish its mission. So a key question is "will the system improve or degrade the unit's performance?". In this area, the Army's assessment is twofold: Dragon II does provide somewhat better lethality without adversely affecting the strategic deployment, tactical employment and structure of Army units; neither Milan or BILL, however, can be effectively utilized in either light or heavy units without adverse impact in these same areas.

Our primary concern, and the area of greatest risk, are units with forced entry contingency missions. US Airborne and Ranger units executing these missions require antiarmor capbilities immediately at hand, a capability Dragon provides because the individual parachutist jumps with a launcher and missle. Neither Milan nor BILL was assessed as being safe for jumping in tactical configuration by parachutists due to excessive weight and bulk. This means that Milan and BILL crews must assemble upon jumping and locate antitank system bundles dropped seperately - a time consuming task at the most dangerous point in the operation.

In all light units - including airborne, air assault and light infantry divisions - the weight, bulk and carry configuration of Milan or BILL components and rounds is a further disadvantage because it requires added crew members to carry a single system and results in fewer systems and missiles getting to the fight. Thus, Milan and BILL may actually degrade, rather than improve the battalion's overall ability to conduct antiarmor operations.

Finally, in mechanized units, where one Antiarmor Specialist in each squad currently employs the Dragon, the larger crew requirement for Milan and BILL and the size of system components (which do not fit storage racks) may force restructuring of the Infantry squad and cause significant disruption to organization and mission performance.

Countermeasures performance of the three systems was also assessed. Dragon and BILL have comparable CM resistance, while Milan suffers from CM problems that place it at an obvious disadvantage.

The Army's overall assessment, therefore, is that though none of the interim alternatives is satifactory, neither BILL nor Milan offer significant operational advantages over Dragon II to warrant the costs in funds, force structure disruption, or other areas (logistics, training, etc) for the interim period in question. Further, any potential that AAWS-M funding might be used to procure either BILL or Milan would have serious longer term implications on Army and USMC ability to complete development and begin fielding of AAWS-M in time to provide the operational capability needed to meet the anticipated mid-90's tank threat.

INTERIM INFANTRY ANTI-TANK WEAPON

QUESTION: General Franklin, why did the Marines recently announce the termination of the Dragon III Development Program?

ANSWER: A government/contractor review of the Dragon III Program during February 89 revealed the following:

a. There was an estimated cost overrun $18 to $20 Million.

b. The schedule was delayed 11 to 13 months.

c. The Tracker weight would exceed the stated requirement by 5 to 7 pounds.

Additionally the Advanced Anti-Armor Weapons System-Medium program had successfully completed proof of principle testing and costs had been significantly reduced from previous estimates. All of the above caused the Marine Corps to reconsider its position and terminate the Dragon III program.

QUESTION: Would you please explain to the committee the Marines' plans to replace the Dragon System?

ANSWER: Congress provided funds for the Marine Corps to procure foreign military sales Dragon I missiles in storage. These additional missiles will meet the Marine Corps training requirements through FY1997. The present Marine Corps Advanced Anti-armor Weapons System-Medium (AAWS-M) program calls for an initial operational capability in FY 1994 or FY 1995. The Marine Corps will depend on Dragon II and TOW IIA as its anti-tank capability until AAWS-M is fielded.

Question: General Sullivan, does the Marine Corps support the fielding of an interim anti-tank weapon prior to the fielding of AAWS-M?

Answer: The AAWS-M is the designated replacement for the currently fielded medium anti-armor weapon, the Dragon. The Dragon system as currently fielded is marginally effective against the current armor threat and will soon be non-effective against Soviet and Soviet surrogate heavy armor (tank). The Dragon, generation III, would have extended the useable life of the current system by upgrading the missile, as well as the siting and tracking system. The cancellation of the Dragon generation III program due to cost overruns and scheduling delays places the Marine Corps at risk immediately, with the risk factor increasing each day until AAWS-M is fielded. The Marine Corps has an immediate requirement for a man-portable, anti-armor weapon system capable of engaging and defeating enemy heavy armor. The TOW, heavy anti-armor weapon, while capable, is not truly man-portable, nor does it exist in sufficient density. The current light anti-armor weapon system, while man-portable and present in adequate numbers, is not capable of defeating heavy armor. However procurement of an interim anti-armor system is not considered a viable solution to the existing shortfall in our anti-armor capability. Increasing the density of existing TOW launchers and upgrading more of the older TOW missiles, for example, may provide a more timely and fiscally responsible interim solution.

QUESTION. General Pihl, the Committee has been informed that the Army has selected the Dragon II as the "interim" system. Would you please outline how the Army came to this decision?

ANSWER. The Army evaluated the supplemental interim candidates for possible contingency force application in accordance with the test plan the Army submitted to Congress in 1987. As directed by Congress, the Operational Test and Evaluation Agency (OTEA) has conducted an independent evaluation of these tests. Additionally, the Army conducted an abbreviated Cost and Operational Effectiveness Analysis (COEA) of the candidate systems. The conclusions of all three evaluations are essentially the same:

(1) The DRAGON GEN II is marginally effective. [Deleted].

(2) Both MILAN II and BOFORS BILL are unsuited for contingency forces due to their inability to be employed by an individual parachutist.

(3) Similarly, MILAN and BILL are unsuited for light infantry employment because their configuration and weight require 3-4 man crews. Their employment would necessitate restructuring those units in order to carry the load and would reduce, by 25 to 50 percent, the number of medium antitank systems available to these units (depending on crew size).

(4) In terms of cost and operational effectiveness, DRAGON GEN II, though not ideal, is the best available system to fill the void while AAWS-M is under development.

QUESTIONS SUBMITTED BY SENATOR ERNEST F. HOLLINGS

DRAGON

QUESTION. The Congress has had a long standing concern about the combat readiness of deployed U.S. forces. This concern is derived from bitter national experience about the cost in human life when our forces were not ready to cope with the offensive weapons of our adversaries. To this end, the Congress has strongly supported the Army's efforts to procure an advanced anti-armor weapon system (AAWS-M) for our ground forces and will continue to do so. But the Congress is also concerned about the Soviet armor systems in the next number of years while awaiting the successful development and deployment of the AAWS-M. So intense has been this determination that our ground forces have an effective anti-armor system during this interim period that this concern was written into law in the FY89 DOD authorization and appropriation legislation. The law requires the Army to select the most "effective" system from among the interim antitank candidates.

In the context of the above objective, the following questions are submitted:

In the 1989 Defense Authorization Act, Congress directed the Army to select the most effective system from among the MILAN II, the Bofors BILL, Dragon 2, and Dragon 3 based on operational testing. Since Dragon 2 was not operationally tested in the same manner as Milan II and Bofors BILL, what prior year test data was used to determine the probability of hit [p(h)] for the Dragon?

ANSWER. The DRAGON GEN II is a product improvement, not a new missile. [Deleted] [deleted] The Army fired over 1000 DRAGON missiles during eight separate operational tests and over 18,000 DRAGONS in training. The p(h) for the DRAGON GEN II used in the interim system selection process was a composite of the operational test data from these eight tests and the most current training data.

QUESTION. Using the p(h) for the Dragon, which was submitted in the March 1988 DOD Armor/Anti-armor Munitions Master Plan, under realistic battlefield conditions, including the effects of the "flinch factor", i.e. noise, stress, strain, fatigue, etc., determine the p(h) for the DRAGON system against stationary and moving targets at ranges of 500, 750, and 1000m. What is the corresponding probability of kill [p(k)] for the Dragon using the above p(h)s against the following targets: T-64B, T-72, and T-80, with and without reactive armor.

ANSWER. The p(h) for DRAGON GEN II used in the interim system was not based on the March 88 Armor/Anti Armor Master Plan. As mentioned in the preceding question, it was based on a composite of operational test and training data. The DRAGON GEN II p(h)/p(k) data used in the interim system selection is listed:

[Deleted].

QUESTION. Regarding accuracy only, what was the p(h) for each of the other candidate systems during the operational testing.

ANSWER. During the Army operational testing of the interim candidates, [deleted].

QUESTION. Rank in order, from most effective to least effective, the MILAN II, Bofors BILL, and Dragon 2 (using a p(k) determined from the p(h) submitted for Dragon in the 3/88 Army Munitions Master Plan using the "flinch factor"), for both moving and stationary targets (T-64B, T-72, T-80, with and without reactive armor, at ranges of 500 to 2000 meters. Against tanks in hull defilade at these same ranges against these same targets.

ANSWER. As previously mentioned, the p(h) and p(k) data for DRAGON GEN II used in the interim system was not based on the 3/88 Army Munitions Master Plan, it was based on operational test and training data. Using this operational test and training data, the systems are listed in rank order. Against a fully exposed T-72/T-80 with reactive armor, the system with the most effective p(K) is the DRAGON GEN II, followed by the BILL, then MILAN. Against the same target hull defilade, the BILL has the most effective p(k), followed by the DRAGON GEN II, then the MILAN II. These rankings do not change over range, except that the Dragon is [deleted].

QUESTION. How much money, throughout all the years, has been obligated for research and development by both the Army and USMC for the Dragon 2 warhead. How much money has actually been spent?

ANSWER. The total R&D funds obligated and spent by the Marine Corps and the Army is $5.9 million.

QUESTION. How much money has been obligated for procurement of the Dragon 2 warhead by both the Army and Marine Corps? For how many warheads? How much money has actually been spent?

ANSWER. Congress has appropriated $24.539 million for the Army DRAGON GEN II procurement of [deleted] this entire amount has been obligated and transferred to the USMC who is the executive service for the DRAGON GEN II. Congress appropriated $18.2 million for the Marines procurement of [deleted] DRAGON GEN II warheads; the Marine's have obligated and expended these funds.

QUESTION. How much money has been obligated for retrofit of the warhead for both the Army and Marine Corps? How much money has been spent?

ANSWER. The Army and Marine Corps have received a total of $11 million in OMA funds for retrofit of the DRAGON GEN II warheads; the entire $11 million has been obligated and $1.1 million has been spent.

QUESTION. When will Dragons actually be outfitted with this new warhead?

ANSWER. The Marines are currently taking delivery of DRAGON GEN II missiles; the Army deliveries are scheduled to begin in September 1989.

QUESTION. Does the single shot probability of kill for the Dragon increase with the new warhead against a T-64B, T-72, and T-80 with and without reactive armor under realistic battlefield conditions (flinch factor)? By how much?

ANSWER. Yes, the probability of kill given a shot p(k/s) did increase with the new warhead. The interim antitank system assessment did not evaluate the T-64B, but the requested probability of kill data on the T-72 and T-80 with and without reactive armor (fully exposed at 1000 meters) is provided below:

[Deleted].

QUESTION. Will the Dragon with the new warhead be able to kill a T-72/T-80 with reactive armor? If the Dragon cannot penetrate these types of targets, then how can the Army justify accepting having our infantrymen use this weapon until at least the mid-90's when many of the areas around the world have this type of armor in place?

ANSWER. [Deleted]. In terms of cost and operational effectiveness, DRAGON GEN II is the best system to fill the void while AAWS-M is under development.

QUESTION. Will the Dragon fly 1000 meters with the new heavier warhead?

ANSWER. The DRAGON GEN II maximum range is [deleted].

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

AHIP

QUESTION. General Pihl, the amended FY90 Budget cancels the Army Helicopter Improvement Program after several years of production. Army field commanders, particularly in Europe, have said that the AHIP fills a critical gap in our war fighting capability. The armed version which, I understand, played a key role in the recent Persian Gulf operations, adds to its versatility and usefulness. The aircraft is in production and is reasonably costed.

Please comment on the performance of AHIP in a field environment.

ANSWER. AHIP field performance to date is outstanding. In addition to AHIP performing superbly at NTC and in Europe, the aircraft has also achieved high marks under actual combat conditions in the Persian Gulf and is still operating off USN ships there.

QUESTION. General Pihl, have our field commanders commented on the aircraft's performance? If so, what have they said?

ANSWER. Our Field Commanders continually report that the AHIP provides a new dimension to the battlefield both as a day/night/adverse weather reconnaissance aircraft and as a survivable platform to adjust conventional and precision munitions. All AHIP's deployed to the Persian Gulf are achieving the upmost in safety and maintenance standards with a cumulative mission capable rate well above the DA standard while flying in excess of 5,000 hours.

At the National Training Center, the AHIP continually gives our commanders a significant new battlefield multiplier. As a reconnaissance aircraft, it identified threat formations at ranges exceeding 15 kilometers and enjoyed considerable success with target acquisition and remote designation of various "smart" munitions.

QUESTION. General Pihl, how do we justify canceling a program such as this?

ANSWER. The reductions in Army programs from President Reagan's Budget to the Amended Budget were significant. We lost AHIP because we could not convince OSD of its high, near-term payoff and high priority to the Army.

QUESTION. In a recent article in "Inside the Pentagon," there appears a letter from Army Secretary Marsh to Defense Secretary Cheney. The letter requests Mr. Cheney to reconsider his decision to cancel the AHIP. Did the Army try to buy back the ship?

ANSWER. Yes sir.

QUESTION. What was the outcome?

ANSWER. The alternative solutions the Army offered to OSD were not accepted.

QUESTION. Does the Army still want the AHIP.

ANSWER. The Army Helicopter Improvement Program (AHIP) would help rectify, in the near term, a significant warfighting deficiency, our limited ability to see the battlefield during day/night and adverse weather operations. It would also give us a head start in modernizing the force by being able to accelerate retirement of older aircraft. However, given the realities of the current fiscal environment it is more important in terms of our Aviation Modernization Plan to insure our future by fully funding the LHX program.

QUESTION. General, DoD has decided to terminate the Army Helicopter Improvement Program at 207 aircraft instead of the 375 envisioned in its Aviation Modernization Program. What happens to today's Army warfighting capability, especially at night, without the fully fielded fleet of OH-58D's?

ANSWER. With a total procurement of only 207 aircraft we will be able to meet our Field Artillery Aerial Observer (FAAO) requirements and field OH-58Ds to our forward deployed cavalry regiments. This slows our force modernization and retirement of older aircraft and will only partially address our limited ability to see the battlefield during day/night and adverse weather operations until LHX is fielded in quantity. Despite what will be 8-10 year gap however, LHX remains the solution and is our first priority in Army aviation modernization.

AHIP/APACHE

QUESTION. General Pihl, it is my understanding that the Hunter/Killer (AHIP/APACHE) concept is critical to the Army's warfighting capability.

Now that the AHIP has been canceled, what is the impact on that needed capability? Please include night operations in your response.

ANSWER. Without AHIP air cavalry units will continue to be severely limited in their operational capability during periods of limited visibility or at night. This makes air cavalry incompatible with ground maneuver forces who are FLIR equipped. The loss of AHIP perpetuates the critical shortfall until LHX is fielded.

GOCO AMMO PLANT CLOSURES

QUESTION. General Pihl, in view of the reduced ammunition budget we understand that the Mississippi, Scranton, Kansas and Sunflower GOCO plants are to be closed. How firm is the closure of these four?

ANSWER. The Army is most concerned with the forecasted layoff of contractor employees at the active GOCO plants and the potential closure of still other facilities. Reduced workloading of the ammunition plants is directly related to reductions in the defense budget request for ammunition and to the nature of the modern munitions being produced.

Based on the FY90 thru FY95 Procurement of Ammunition Army (PAA) funding profiles, the Army will be forced to make hard and prudent business decisions in regard to deactivation of active GOCO plants. Mississippi, Scranton, Kansas, and Sunflower GOCO plants may be candidates for deactivation because of program reductions.

Mississippi - Solely dependent on M483A1 production. Last buy of M483A1 is FY89. Mississippi would be deactivated in phases over the FY90 - FY92 timeframe.

Scranton - By the end of FY90, Scranton will be solely dependent on M864 metal parts production. In FY90, Scranton will receive 60,000 metal parts to coincide with line facilitization and delivery schedule. In FY91 both Scranton and Louisiana AAP's will compete for the workload. If unsuccessful in this workloading strategy, Scranton could be a candidate for deactivation in FY92.

Sunflower - The Army's proposed plan is to operate Sunflower AAP through FY92 and then shutdown for approximately five years. The Army's stockpile of Nitroguanidine in FY92 will reach 18.5 million pounds with a planned draw-down at the rate of 2.5 million pounds per year. Studies show that it is more cost effective to operate at the higher production rates over a shorter period than smaller quantities continuously.

Kansas - In FY90, both Kansas and Milan AAP's will receive a portion of the M864 load, assemble & pack workload. In FY91 both facilities will compete for the workload. If unsuccessful in this workloading strategy, Kansas could be a candidate for deactivation in FY92.

M864

QUESTION. General Pihl, in the event of closure of Scranton what plant will produce the metal parts for the extended range base bleed M864? Will a second source be identified to replace Scranton and if so, why , as Louisiana has existing capacity to produce the forecast requirements?

ANSWER. As a result of the plus-up of $300.0M in FY 90, the Army has been able to increase its buy of M864's from 120,000 to 240,000. This additional quantity will provide metal parts workload for both Scranton and Louisiana AAP's through FY92 execution year.

The current FY91-94 procurement profile for the M864 (120,000) could be provided either to Scranton or Louisiana. If Scranton were to be closed, Louisiana AAP has sufficient capacity to produce the out years quantities of 120,000 annually. The government would not consider a second source unless the demand for large caliber metal parts exceeds a two shift operation at Louisiana AAP.

REMAINING GOCO PLANT ACTIVITY

QUESTION. General Pihl, what is the Army plan to continue operation or closure of the remaining GOCO's? What level of funding is required?

ANSWER. The Army may have to deactivate a number of currently active GOCO's due to budget reductions. The status of a plant is predicated on the requirements accumulated from the Army and its customers for that plant's product. Additional GOCO's could be planned for deactivation based on this demand. To prevent these plants from becoming inactive would require the Army to increase the planned quantities of ammunition items unique to these production facilities, and in so doing unbalance the days-of-supply procurement strategy. This balance of ammunition inventory is most essential to the battlefield strategy and overall readiness posture.

Artificial plus-up to the workload level at any plant is only a temporary solution to the employment levels and plant activity and it contributes to an imbalance of inventory and is destined to cause extreme turbulences in the employment level once the support ends.

To preclude plant deactivations/personnel layoffs, and to maintain workload levels at most plants; it is estimated that an additional 1.0 to 1.5 billion dollars would be required. Some plants product lines cannot support increased buys and personnel losses at other plants cannot be avoided even with increased FY90 Program. Additionally, safety considerations could preclude increasing specific plant workload levels.

An in-depth study of all service requirements versus OSD guidance would need to be performed to provide an accurate portrayal of ammunition programs that would not exceed authorized levels of supply thus preventing complete line shut done in the future.

155MM HOWITZER AMMUNITION

QUESTION. Is it the Army's plan that the M864 continue as a supplement to the M483 or eventually replace the M483? If it is to replace the M483, at what M483 inventory level would the M864 replacement be initiated?

ANSWER. The M864 will be bought in lieu of the M483. In that it has a longer range the M864 complements the M483 in operational use.

DAYS OF SUPPLY - - AMMUNITION MEASUREMENTS

QUESTION. General Pihl, what is the AAO for the M864 basebleed 155mm artillery shell?

ANSWER. The AAO for the M864 155mm artillery round is 5.673 million.

QUESTION. General Pihl, I am concerned that we may be stopping the production of the M483 earlier than we should. What is the Army's stated procurement objective for the M483 and what is the current delta?

ANSWER. In accordance with defense guidance, the Army's procurement objective for the M483 is [deleted] [deleted]. Assets on hand at the end of the fiscal year 1989 funded delivery period total 4.880 million rounds, for a delta of [deleted]. Although inventory levels of the M483 are below defense guidance, funding for this round has been deferred in order to procure higher priority munitions such as the M864 baseburner artillery round.

ARMY MOBILIZATION

QUESTION. General Pihl, the Army mobilization plan shows LAAP as a mobilization source for the M107 metal parts. LAAP does have a large capacity modernized line for this item which has been laid away without prove out. How many other items shown as part of Army mobilization have never been proved out?

ANSWER. Debug and prove out of the M107 metal parts lines were never accomplished due to funding limitations. While there are approximately 40 lines which have not been completely proven out there are instances where prove out may not be warranted. If the line contains standard equipment and is manually operated, little or no prove out is required. Also, there have been projects in which deficiencies have been noted during proveout and laid away with the intent to correct upon mobilization. Finally, certain projects were laid away because anticipated production requirements did not materialize. In the case of Mississippi, however, when deficiencies were noted during prove-out, the Army took action to correct those deficiencies.

MSAAP

QUESTION. General Pihl, if the Army position is that prove out can be done as part of mobilization why does operation of MSAAP continue?

ANSWER. The need for the prove out is in direct proportion to two factors: (1) the more state-of-the-art is challenged, the more the need for prove out, and (2) the greater the degree of integration of the total process, the more the need for prove out to assure these links are properly designed and contain sophisticated buffers. MSAAP is a highly integrated facility, relying on sufficient electronic process control systems; thus, prove out is very essential. In addition, prove-out is required in this instance to ensure successful completion of modernization project.

LAAP

QUESTION. General Pihl, a continuing statement from the Army is that the GOCO's should do more third party work. In the case of LAAP, the three most attractive items for third party activity are the M825 Smoke, the ADAM round, and the MICLIC. However, in each case, the Army will not supply certain services or materials available only from DOD or will not agree to other than FMS export. If State has no objection, why does the Army disagree to export?

ANSWER. The only requirement we impose on a third party contract for direct foreign sales is that final approval is contingent upon receipt of written confirmation that the contractor has satisfied requirements for the export license number, and State Department approval for the sale to a foreign country. However, it must be pointed out that in some cases the Army may not want the technology exported even if the State Department approves export of the item, or that Army may want to restrict a foreign sale to FMS so that the work can be directed into an essential production facility. With respect to the M825 Smoke, Adam, and MICLIC the Army would support any third party work for these items at Louisiana AAP.

ARMY OBJECTIVE

QUESTION. General Pihl, the law allows DOD to supply materials and services available only from the government. What is the Army objection?

ANSWER. The Army has no objection to the supply of materials and services for any third party contract. In order to support supply of materials for third party contracts HQ. U.S.

Army Armament, Munitions and Chemical Command (AMCCOM) was the initiator of the action that led to passage of PL 97-392. In concert with PL-97-392 AMCCOM also surfaced and researched PL 96-154. These two Public Laws allow the sale of DOD owned material for third party contracts. Under PL 97-392 and PL 96-154 the Army supplies material and supplies if certain criteria is met. The material to be purchased from the Government is not commercially available or not commercially available in the quantity, condition, or with the required lead time necessary to satisfy their third party contractual requirements. However, in third party sales to support DOD requirements (PL 96-154), the materials must be declared excess and will not deplete stocks to the point where current or anticipated single manager requirements cannot be met.

155MM HOWITZER AMMUNITION

QUESTION. We have also heard rumors that the Army may object to export of the M864 except for FMS. Why?

ANSWER. This decision is currently under study. In the past it has been an Army policy to restrict production of newly developed ammunition to the U.S. Production Base. However, high interest in direct foreign sales has caused the Army to revisit this policy.

GOCO LEGISLATION

QUESTION. General Pihl, do we have any draft legislative language that should be addressed by the Congress to aid third party contracting?

ANSWER. We are not aware at this time of any legislative language that has been prepared or drafted that would aid the contractors operating GOCO's to solicit third party contracts.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

CHEMICAL WEAPONS ARMS CONTROL AND VERIFICATION

QUESTION. The proliferation of chemical weapons appears to be running apace, even while negotiations for a complete and total ban on their production and stockpiling continue in Geneva. Perhaps the most intractable problem in controlling the spread of chemical weapons or enforcing their prohibition is that of adequate detection and verification of production. Should the negotiations in Geneva to ban chemical weapons be successful, an adequate verification regime will be critical. The Army is the lead agency for the U.S. chemical warfare program. What research efforts are being made to improve our verification capabilities in this area?

ANSWER. The Army is the lead agency for the U.S. Chemical Warfare and Chemical/Biological Defense Program. Army expertise in CB Defense has been exploited to support technical operation of rolling text (C/D-500 Geneva), the National Trial Inspection and verification modalities. For example technologies in detection and warning systems being developed for force protections are applicable to this requirement.

The Defense Nuclear Agency, designated by the Deputy Secretary of Defense as the DoD's executive agent to coordinate all treaty verification RDT&E in support of on site inspections, is responsible for implementing and managing technology development. In FY90, DNA has requested $18M for all verification technology programs with $100K dedicated to the Chemical Treaty program.

ROLE OF RESERVES AND NATIONAL GUARD

A recently published report by the Brookings Institution (U.S. Army Guard and Reserves: Rhetoric, Realities, Risks) states that, "The Army reserves of the late 1980's bear unprecedented levels of responsibility for the defense of the United States." For example, the Department of Defense reports that the reserves and National Guard account for over 50 percent of the Army's infantry, military intelligence units, engineering battalions, and field artillery battalions. (Reserve Component Programs Report FY 1988, February 22, 1989). At the same time, there is evidence that training and equipment levels of Army reserve forces are inadequate to meet their combat responsibilities.

ROLE OF RESERVES AND NATIONAL GUARD

QUESTION: Do you foresee an increased investment in up to date equipment for the Reserves?

ANSWER: Yes, the Reserve Components are integrated into all Army modernization and equipment fielding plans. They are receiving modern equipment as a function of those plans. Modernization of RC units continues based on a fielding strategy of first to fight is first to be modernized.

QUESTION: What steps do you believe are required to bring the capabilities of Reserve forces up to their assigned responsibilities?

ANSWER: Continue to modernize in accordance with modernization plans. In addition, we must work the Military Occupational Specialty Qualification (MOSQ) issue. We now recognize that the limiting factor for the Reserve Components to achieve their assigned responsibilities is training time. Limited training time in the RC is constraining.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

AH-64

QUESTION. If the current AH-64 acquisition plan is accepted by Congress, the United States will lose its attack helicopter production base in 1993. It will be 1998-2000 before we will have an effective LHX force in the field assuming everything stays on schedule.

I tend to have greater faith in proven systems, and I would like to know what is the security risk to the U.S. of a cold production base? What would be the cost to start it back up if we had to? How does that compare to maintaining a minimum production base for a few more years?

ANSWER. The cost to restart the AH-64 production line would be approximately $400 million. Maintaining a production base at the minimum sustaining rate of 39 aircraft per year would cost approximately $650 million per year.

QUESTION. Last year, Congress approved the Army recommendation for a four year multi-year procurement (MYP) at 60 aircraft and authorized and appropriated $76 million in Advanced Procurement Funds to support the MYP. The recently revised FY90-91 budget does not provide for the MYP and, furthermore, cancels the AH-64 production after FY91.

Would you comment on this change in strategy?

ANSWER. The change in strategy was dictated strictly by affordability decisions made within the context of a changing defense funding picture.

APACHE

QUESTION. General Pihl, the recent decision to reduce Apache procurement to 807 equates to a reduction of 7 attack battalions. What is the effect of this reduction on Active, Reserve, and Guard units?

ANSWER. The Army had to make some tough choices to stay within the President's Budget guidelines. Trade-offs made supported the best security posture achievable. Termination of AH-64's still procures 807 aircraft which supports 40 of the 47 resourceable battalions. Assuming all 47 battalions made it to the fight, this equates to a 15% reduction in armed helicopter tank killing capability, however, some of our NG AH-64 battalions do not arrive until after D+60. This is an acceptable near-term risk that will be offset by the fielding of LHX in FY 97.

QUESTION. How does this effect the round-out missions of the Guard units?

ANSWER. None of the Reserve component units were roundout.

QUESTION. With what are you going to replace the AH-64s for the Guard in the near term?

ANSWER. The units, to include personnel and equipment, will be removed from the National Guard structure.

TOW

QUESTION. Hughes Aircraft Company manufactures and has produced over 450,000 TOW missiles at the Hughes facility in Tucson. On a broader scale, however, there is a national interest involved in a missile that is in the inventory of nations around the world. For over 3 years, there have been discussions relating to establishing a second source or going with multi-year procurement. The Army issued a TOW second source RFP on 13 January, and the responses received are now being evaluated. In an Army study conducted in 1978, it was determined that Hughes and its major subcontractors have the capability to produce 42,000 TOW missiles per year (3,500/month) on a normal two-shift basis. This exceeds projected Army TOW missile production requirement by over 100 percent. What justifies establishing another source with additional 12,000 per year (1,000/month) capability?

ANSWER. Hughes Aircraft, Tucson, AZ, was facilitized to an annual production rate of 42,000 TOW missiles on a 2-8-5 augmented work shift. However, TOW 2A missiles which are currently being procured by the U.S. Army and USMC are restricted to a maximum production rate of 30,000 per year. The 12,000 missile balance (of the 42000/year 2-8-5 work shift rate) is limited to earlier configurations of the TOW missile which are procured for FMS customers only. Facilitization at this level is maintained for surge purposes. Minimum sustaining rate at the Hughes facility is 12,000 missiles per year (all configurations). The Army quantity combined with the Marine quantity and the FMS quantity (traditionally 6000 plus/year) will adequately workload the Hughes facility in FY90 and 91 while the second source is being brought on line. FY93 thru FY94 the Army and Marine Corps quantities in the FYDP have been increase to 20,000 per year. These quantities combined with FMS will adequately support two facilities in a competitive environment with the added benefit of reduced price and increased wartime surge capability.

QUESTION. The Army projections of missile requirements presented in the second source solicitation for FY92-94 are 20,000 TOW 2B missiles per fiscal year. Are these quantities influenced by the dual source plans?

ANSWER. Army requirements are approximately 24,000 per year, however, for budget reasons, a lower quantity has typically been procured. Hughes minimum sustaining rate is 12,000 per year. The FY 92-94 Army/Marine Corps quantities combined with FMS projections will adequately support two sources with the added benefit of reduced cost thru competition and increased wartime surge capacity.

QUESTION. The Army has invested over $25 million in establishing a TOW missile production surge capability at the Hughes Tucson facility in the event of a national emergency. Do you have similar plans for the second source contractor? How does this surge capability fit into the Army's dual source plans?

ANSWER. The Army has facilitized Hughes Aircraft Company to produce 30,000 TOW 2As per year (2,500 per month) under two shifts per day surge conditions. The recent surge investment of $33.4M, however, was to establish a rolling inventory of parts to allow Hughes to reach a production rate of 2,500 TOW 2A missiles per month within 6 months and sustain that rate. The second source will be facilitized to make 12,000 missiles per year on a one shift basis. Increased facilitization of approximately $7.1M at the second source may be required in the event of a future buy-out competition. Current Army plans, however, are to maintain two sources. The surge inventory would not be affected by such a competition.

AHIP

QUESTION. General Pihl, the revised FY90 budget cancels the Army Helicopter Improvement Program (AHIP) after several years of healthy production. Army field commanders, particularly in Europe, have said that the AHIP fills a critical gap in our warfighting capability. The armed version which I understand played a key role in the recent Persian Gulf operations, adds to the AHIPs versatility and usefulness. The aircraft is currently in production at cost-efficient levels.

How well does the AHIP perform in a field environment?

ANSWER. AHIP field performance to date is outstanding. In addition to AHIP performing superbly at NTC and in Europe, the aircraft has also achieved high marks under actual combat conditions in the Persian Gulf and is still operating off USN ships there.

QUESTION. Have Army field commanders commented on the aircraft's performance? If so, what have they said?

ANSWER. Commanders continually report that the AHIP provides our field a new dimension to the battlefield both as a day/night/adverse weather reconnaissance aircraft and as a survivable platform to adjust conventional and precision munitions. All AHIP's deployed to the Persian Gulf are achieving the upmost in safety and maintenance standards with a cumulative mission capable rate well above the DA standard while flying in excess of 5,000 hours.

At the National Training Center, the AHIP continually gives our commanders a significant new battlefield multiplier. As a reconnaissance aircraft, it identified threat formations at ranges exceeding 15 kilometers and enjoyed considerable success with target acquisition and remote designation of various "smart" munitions.

QUESTION. Seeing that the AHIP is so highly regarded by those on the frontline, how do we justify canceling a program such as this?

ANSWER. The reductions in Army programs from President Reagan's Budget to the Amended Budget were severe. We lost AHIP because we could not convince OSD of its high, near-term payoff and high priority to the Army.

QUESTION. In a recent article in "Inside the Pentagon", there is a letter from Army Secretary Marsh to Defense Secretary Cheney requesting Secretary Cheney to reconsider the decision to cancel the AHIP. Did the Army try to buy back the AHIP?

ANSWER. Yes sir.

QUESTION. If so, what was the outcome?

ANSWER. The alternative solutions the Army offered to OSD were not accepted.

QUESTION. Does the Army still want the AHIP?

ANSWER. The Army Helicopter Improvement Program (AHIP) would help rectify, in the near term, a significant warfighting deficiency, our limited ability to see the battlefield during day/night and adverse weather operations. It would also give us a head start in modernizing the force by being able to accelerate retirement of older aircraft. However, given the realities of the current fiscal environment it is more important in terms of our Aviation Modernization Plan to insure our future by fully funding the LHX program.

QUESTION. Does the AHIP, in concert with the Apache, continue to fulfill the role for which it was envisioned? If so, given the increased reliance on conventional weapons and limited warfare in the near term and the lengthy lead time needed before the LHX reached full production, can we afford to curtail these programs at the present time?

ANSWER. AHIP is being procured as an Armed Reconnaissance (Cavalry) and Field Artillery Aerial Observation (FAAO) aircraft. Without AHIP air cavalry units will continue to be severely limited in their operational capability during periods of limited visibility or at night. This makes air cavalry incompatible with ground maneuver forces who are FLIR equipped. The loss of AHIP perpetuates the critical shortfall until LHX is fielded.

QUESTION. The Army has been involved with LHX since 1982. Unfortunately, there have been several slips in the program to date. This is a familiar problem with many new systems, most of which do not meet their initial development schedules. With this in mind, what assurances can you give that the Army can bring this program on schedule and cost, while meeting performance requirements? If the Apache and AHIP programs are terminated, what happens to our combat readiness by the end of this century?

ANSWER. The Army initiated LHX concept exploration in FY 84 with a one million dollar investment in the Advanced Rotorcraft Technology Integration (ARTI) effort oriented on single pilot feasibility and cockpit architecture. Since that time, the program has progressed through a series of planned and effective concept exploration and demonstration/validation (DEM/VAL) efforts. The T800 engine development has proceeded smoothly on cost and schedule. The T800 engine has met or bettered all performance, supportability, and cost goals. The Army already has in place production and operating cost guarantees for the LHX power plant.

The Army has high confidence that the LHX program will meet its performance, schedule, and cost requirements if planned funding is sustained in the budget process. The LHX program has not slipped. The Defense Acquisition Board (DAB) approved the LHX for entry into the competitive Dem/Val phase in June 1988 at the Milestone I review. The program approved by the DAB was predicated on an Fiscal Year 1997 Initial Operational Capability (IOC) and initiation of Dem/Val in late 1988.

With AHIP cancelled, a critical deficiency exists in reconnaissance aircraft being able to see the battlefield, both during the day and at night. This deficiency exists until LHX is fully fielded. Apache termination, along with AHIP cancellation will result in reduced force structure requiring a reshaping our warfighting plans and strategy.

AH-64

QUESTION. In the FY89 Appropriations bill, the Army was provided an additional $50.4 million to ensure sufficient funds to procure 72 Apaches. Subsequent discussions with the Army indicate these funds were not needed. I assume, therefore, that by turning these funds down, you are assuring us that you can procure 72 AH-64s in FY89.

Is this assumption correct?

ANSWER. Yes sir. However, the $50.4 million is required to procure the training devices and survivability equipment to field the Fiscal Year 1989 procurement of 72 APACHEs.

APACHE

QUESTION. I am aware that there are a number of countries which are interested in procurement of the Apache in the mid-1990s. In fact, I believe that Mr. Stone traveled to NATO to encourage consideration of the AH-64 and that the Program Manager has done the same in the Middle East.

What impact do you think the decision to curtail Apache production will have on these countries? Won't the cost of the AH-64 increase to the point where these countries will have to consider options resulting in a significant loss of business to our aerospace community and have a negative effect on our overall trade deficit?

ANSWER. The initial impact of the decision to curtail APACHE production may very well be to instill a sense of urgency in prospective buyers to initiate Foreign Military Sales (FMS) negotiations to enable them to procure AH-64's at the lowest possible price. However, it is also possible that the curtailment decision may be detrimental to potential FMS. Although Fiscal Year 1991 is the last year of procurement, deliveries continue into mid-1993. Therefore, the competitive window of opportunity remains open for the near term.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

MULTIPLE LAUNCH ROCKET SYSTEM

QUESTION. In his statement to this Committee, Secretary of the Army Marsh calls the MLRS "The best equipment of its kind anywhere in the world." I completely agree. But if this is true, shouldn't this "best of its kind anywhere in the world" weapon be funded at more than a level that cuts the rocket production by 67%? Isn't it true that the Army requested more rockets but this got cut in the Office of the Secretary of Defense?

ANSWER. For the FY90 budget submission, the Army requested funding to procure 24,000 MLRS rockets. The number of requested rockets was based upon Army priorities in the constrained budget. The previous year the Army procured 48,000 rockets. In their staffing of the FY90 Budget submission, the Office of the Secretary of Defense supported the Army's requested MLRS procurement of 24,000 rockets.

SEALIFT SHORTFALL

QUESTION. A number of witnesses have told this committee of their concern for our lift capabilities. Which do you consider more serious, our sealift or airlift shortfall? Given that about 90% of our materiel in wartime will go to Europe by ship and the decline in our merchant marine, isn't the sealift shortfall very serious?

ANSWER. Strategic mobility remains a triad of airlift, sealift and prepositioning. Each satisfies a unique part of the strategic mobility equation; thus making it inappropriate to favor one over the other. The one that currently needs the most attention is sealift. There are currently viable programs to address both airlift and prepositioning. There are not, however, viable programs to address the sealift problem either at the DOD or national level.

MULTIPLE LAUNCHER ROCKET SYSTEM (MLRS)

Question: Has the Marine Corps looked at the potential of MLRS for Marine Missions? Wouldn't MLRS be of significant value in opposed landings?

Answer: The Marine Corps has conducted several studies to consider the MLRS as a possible Marine Corps weapon. The Marine Corps Force Structure Study, 1980 - 1989 (drafted in 1980); the Marine Corps Long Range (1985 - 1995) Armor, Anti-Armor, Fire Support and Combat Mobility Requirements and Programs Study (drafted in 1983): both recommended that rockets be integrated into the Marine inventory as a means of increasing fire power while reducing artillery structure. More recently, the draft version of the MAGTF Master Plan and the Mission Area Analysis for Fire Support, both of which were completed in 1989, recommend that rocket technology be considered to fulfill the requirement for a highly mobile, expeditionary fire support system which is capable of providing decisive, high volume, long range fire support to the MAGTF during all stages of an amphibious assault and subsequent operations ashore. A Letter of Requirement is currently in staffing in order to further refine our operational requirements and deployability expectations for a General Support Rocket System (GSRS).

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

TACTICAL WHEELED VEHICLE MODERNIZATION PLAN

QUESTION. "The Army's tactical wheeled vehicle modernization plan calls for a Service Life Extension Program, or SLEP, to remanufacture trucks to modernize part of an aging medium truck fleet at reduced cost. I understand that the Army has designated the truck shortfall in the 1990's as a real "show-stopper" in a war. In fact, according to Army figures, by the mid-1990's we will be tens of thousands of trucks short of so-called Initial Issue Quantity and POMCUS level, which is what the Army considers its minimum level to fight and survive a war. Note that I said, and I believe these are the Army's own definitions, not "win" a war but "survive" it. "Is this an accurate picture of the Army's truck needs?"

ANSWER. No. The recently approved Tactical Wheeled Vehicle Modernization Plan establishes a program of procurements and selected service life extension (medium fleet only) which will will provide sufficient assets on hand by the 1990s to fill Initial Issue and POMCUS requirements. Recent procurements of the Heavy Expanded Mobility Tactical Truck (HEMTT) and programmed buys of the Palletized Load System (PLS) will effectively "fix" the heavy fleet. Current procurements of the HMMWV provide equivalent relief in the light fleet. Our challenge is to fix the medium fleet. While sufficient medium trucks are on hand to meet procurement objective quantities, approximately 45% are overaged and not economically supportable. To make the best use of available funds the Army has programmed procurement of approximately 75,000 Family of Medium Tactical Vehicles (FMTV) (2.5 ton & 5 ton trucks) and will extend the service life of approximately 35,000 existing vehicles, which will fix the medium fleet by the year 2010.

SERVICE LIFE EXTENSION PROGRAM (SLEP)

QUESTION. General Pihl, how much faster would the Army get up to its Initial Inventory and POMCUS level with a SLEP than relying on new truck procurement?

ANSWER. The SLEP program has no impact on filling initial and POMCUS requirements, since only new truck procurement can fill shortages. The SLEP program is an interim measure to reduce high operational and support costs on a limited number of existing assets through a remanufacturing program until new procurement vehicles are available in sufficient quantities to wash out old assets. The new procurement (FMTV) vehicles will fill shortages, and provide vehicles with even lower operational and support costs, increased performance capability and increased reliability, availability, and maintainability (RAM) (factor of 2 to 3 times improvement).

QUESTION. General Pihl, given that the Army is facing a problem that is a real "shop stopper"; and, given that the SLEP is not a complex developmental program; and, given that no other single solution will more cost-efficiently restore and maintain mission readiness; and, given that the Army supports the concept of a SLEP, why has the Army delayed the SLEP into FY 1993?

ANSWER. The purpose of SLEP is to upgrade a portion of the existing overage medium fleet through a combination retrofit/maintenance program. SLEP is intended as an interim rehabilitation effort until sufficient new vehicle procurement is in place to permit "normal" washout of vehicles, above the procurement objective as they exceed their economic life. In designing SLEP, various levels of maintenance/upgrade efforts were analyzed. New truck procurement is more cost effective than SLEP, however, it is less affordable. Vehicle "remanufacture" was selected, based on factors such as affordability and length of time the existing fleet will be retained in use. FY 1993 is the first year of funding for SLEP based on affordability and limited TOA for the truck programs.

QUESTION. General Pihl, the truck SLEP enjoys the support of the Commanding Generals of the Army Training and Doctrine Command, the Army Logistics Center, and The Army Transportation Center. I am also told that it enjoys the support of the users, who know how important it is to maintain the Reliability, Availability, and Maintainability of our medium truck force. Is there any reason why the Army could not move the truck SLEP forward into FY 1991.

ANSWER. The SLEP program funding begins in FY 1993 because it is considered unaffordable in earlier years based on its relative priority to other essential Army programs and limited available TOA.

QUESTIONS SUBMITTED BY SENATOR ALFONSE M. D'AMATO

ARMY HELICOPTER IMPROVEMENT PROGRAM (AHIP)

QUESTION. The Army Helicopter Improvement Program (AHIP) is scheduled for termination with only 50% of requirements met, and initial production of the Light Helicopter Experimental (LHX) is not expected before FY95. What system will fill the gap left by the premature cancellation of AHIP?

ANSWER. With a total procurement of only 207 OH-58Ds we will be able to meet our Field Artillery Aerial Observer (FAAO) requirements and field unarmed OH-58Ds to our forward deployed cavalry regiments. This slows our force modernization and retirement of older aircraft and will only partially address our limited ability to see the battlefield during day/night and adverse weather operations until LHX is fielded in quantity. Less and unarmed OH-58Ds means continued reliance on the older, less capable AH-1s and OH-58As and Cs in the interim. Despite what will be a 8-10 year gap however, LHX remains the solution to this critical battlefield deficiency and is the first priority in Army Aviation Modernization.

Joint STARS

QUESTION. What is the status of the Joint Surveillance Target Attack Radar System (JSTARS) Program?

ANSWER. The Army Ground Station Module (GSM) program has been restructured to define a Full Scale Development (FSD) Block I and Block II effort. Block I develops hardware and software capable of simultaneous multi-sensor processing, enhanced built-in-test, imbedded training and a full mission data storage capability. Block II development achieves full nuclear, biological, chemical, and ballistic hardening by integrating the reduced size Block I system into an alternative hardened shelter system. Currently the Army is continuing Full Scale Development of the Block I GSM.

AH-64

QUESTION. A stinging memo has recently surfaced from within the Army on the AH-64 Apache Attack Helicopter. What can you tell us about it?

ANSWER. The memorandum in question was written by an Aviation Brigade Commander, a Colonel, to the Commanding General of the Aviation Systems Command in St. Louis, Missouri. The Colonel was calling attention to problems, primarily reliability, that his unit had recently experienced with the APACHE and was soliciting assistance from the General in resolution of those problems. There were no new problems addressed within the memorandum or subsequently by the media. Corrections for all problems addressed in the memorandum had been previously identified by the Army and along with the prime contractor, McDonnell Douglas Helicopter Company, correct actions are on-going.

STINGER-RMP

QUESTION. When do you anticipate that the software problem with the Stinger-RMP Deleted Deleted Deleted Deleted Deleted will be rectified?

ANSWER. The contractor is continuing to work this problem under the engineering development contract. This FY84 contract for $35.5 million and 39 months is funded to ceiling and all ongoing work is being done at no cost to the Government. The contract was extended last year until July 1989 to work the hidden target and other problems which have been resolved. The contract is being extended again until July 1990 to continue to work towards solution of the hidden target problem. Deleted Deleted Deleted Deleted Deleted Deleted It is anticipated that significant progress can be made during the contract extension period, however, a successful solution to this difficult problem within this timeframe cannot be guaranteed.

M60/M113

QUESTION. How many active divisions are still fielding the M60 and the M113?

ANSWER. There are currently 10 Divisions, 2 Separate Brigades and 3 Armored Cavalry Regiments which constitute the heavy units in the active component. 5 Divisions and 2 Brigades are equipped with M113 as their primary infantry carrier. 3 Divisions and 1 Brigade have the M60A3 as their main battle tank. By FY94, all active component heavy units will be equipped with the M2 Bradley IFV and the M1 Abrams series tanks. However, the M113 family of vehicles will remain in the heavy active component units beyond the year 2000. Headquarters, engineer, air defense, military intelligence, medical and artillery units of armored/mechanized forces will be equipped with the M113 for a variety of battlefield missions.

SUBCOMMITTEE RECESS

Senator **Inouye**. So the subcommittee will now stand in recess until 1:30, Wednesday, May 17. At that time we will receive the Army posture statement from the Secretary and the Chief of Staff. You see we hear from you first before we get to them. So we will have a few questions to ask them.

Thank you very much.

[Whereupon, at 11:50 a.m., Tuesday, May 16, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

WEDNESDAY, MAY 31, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 1:20 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Johnston, Sasser, Cochran, Stevens, D'Amato, and Specter.

DEPARTMENT OF DEFENSE

U.S. SEAPOWER

STATEMENT OF VICE ADM. JOHN W. NYQUIST, U.S. NAVY, ASSISTANT CHIEF OF NAVAL OPERATIONS (SURFACE WARFARE)

OPENING REMARKS OF SENATOR INOUYE

Senator INOUYE. First, my apologies for being late. We are having our markup on the supplemental, and there is an attempt to raid the defense appropriations for other purposes.

In a statement before this subcommittee last year, then Under Secretary Garrett stated, and I quote: "Maritime superiority for the United States is not a luxury, but an immutable requirement, and seapower is the chief guarantor of our survival as a maritime Nation."

Today, the Defense Subcommittee has asked senior Navy officials and military officers to come and review the status of our Nation's seapower, both as it exists today and as it is projected for the future.

In addition to reviewing the equipment, force structure, and training required for the Navy to carry out the seapower component of U.S. national security, we have asked these officials to discuss new and ongoing acquisition programs and their role in satisfying the Navy's mission.

The Navy missions of strategic deterrence, sea control, power projection, and strategic sealift provide the framework for determining the force structure and acquisition program requirements.

In the current austere fiscal environment, the Navy is faced with the tough job of prioritizing these needs and recommending the force structure and those acquisition programs that solve our more urgent military shortfalls.

The amended fiscal year 1990 Navy budget request provides a $400 million increase from the amount funded in fiscal year 1989, but reduces the original Reagan fiscal year 1990 request by $3.9 billion.

This proposed change is accommodated in part by reducing the Navy's force structure through the early retirement of the aircraft carrier *Coral Sea* and reduction in the number of destroyers and frigates in the active forces.

In addition, the proposed cancellations of Navy weapon procurement programs, the V-22 Osprey aircraft program, the new F-14B aircraft, and an SSN-688 attack submarine, contribute to this reduction along with scheduled delays in some antisubmarine warfare and mine warfare weapon systems.

The subcommittee is very interested in the operational considerations which influence these decisions, and the short- and long-term impacts they will have on this Nation's seapower.

Therefore, the subcommittee is pleased to welcome the Hon. Everett Pyatt, Acting Under Secretary of the Navy, along with Vice Adm. John W. Nyquist, Assistant Chief of Naval Operations for Surface Warfare, and Vice Adm. Peter Hekman, the Commander of the Naval Sea Systems Command.

We thank you for coming and we look forward to your testimony.

But, before we hear from you, I have been advised that my distinguished colleague from New York wishes to submit a statement before Admiral Nyquist is called upon to make his statement.

Senator D'Amato.

Senator D'AMATO. Mr. Chairman, thank you for your courtesy.

I am simply going to ask that my statement be entered into the record as if read in its entirety.

Tomorrow I will have some specific questions, as I told Mr. Pyatt and the Admiral, but I will not ask them today. They relate to the F-14 and whether or not the Navy, in choosing its priorities, really supports the decision made on that. I am not asking their opinion as good soldiers, but I am asking as it relates to what they consider to be the most important priorities given the fiscal constraints, that is, whether or not they would choose the elimination of the F-14 and probably then the end of an industrial base and true competition for future Navy acquisitions for firms such as Grumman.

I believe that this will be the final result of the loss of that plane. It will mean the end of them as an industrial base for building Navy aircraft. They may have other roles, but certainly not in the traditional sense that they have heretofore.

I thank the Chairman.

Senator INOUYE. Thank you.

[The statement follows:]

STATEMENT OF SENATOR ALFONSE D'AMATO

Thank you, Mr. Chairman. I'm pleased to note that this committee is taking the time to hold two hearings specifically on the Navy budget and a third on tactical airpower involving both the Navy and the Air Force. The United States has a long history as a maritime power and, as important as the other services are, I believe the Navy will have the most critical role in the defense of our Nation in the immediate future.

Dramatic political changes are occurring in all corners of the world. Some say the United States can and should reduce the strength of its forces deployed on foreign soil. Even if this course is chosen, the Navy must remain strong. I share Defense Secretary Cheney's view on the lessening of world tensions: We can have cautious optimism, with the emphasis on cautious.

Therefore, if cutbacks are made either in current forces or in future procurement, the United States must not leave itself without options for rapidly reversing course and rebuilding capabilities. I believe it is the Navy, with its ability to project forces all over the globe, that must remain strong and ready in case they are needed.

One of my greatest concerns is in the area of submarine warfare. The Walker spy case and the Toshiba give-away of technology to the Soviets have dealt a very serious blow to the ability of the United States to detect and evade enemy submarines. I will be asking our witness how the Navy can step-up its efforts to regain a margin of safety in this dangerous game.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator INOUYE. Now, I will call upon Vice Adm. John W. Nyquist of the U.S. Navy.

Admiral NYQUIST. Thank you, Mr. Chairman.

With your permission, I would like to submit my written statement for the record, sir.

Senator INOUYE. Without objection, your full statement will be made a part of the record, sir.

Admiral NYQUIST. Thank you, sir.

[The statement follows:]

STATEMENT OF VICE ADM. JOHN W. NYQUIST

Mr. Chairman and distinguished members of the committee, I am Vice Admiral John W. Nyquist, USN, the Assistant Chief of Naval Operations (Surface Warfare) and the sponsor for the Shipbuilding and Conversion, Navy (SCN) Appropriation.

It is my privilege today to present the Navy's SCN budget request for Fiscal Year 1990 and to review our Five Year Shipbuilding Plan. The ships in this plan will sustain and upgrade the capabilities of the Fleet to enable us to keep pace with the threat and carry out the maritime component of the U.S. national strategy into the next century.

For more than forty years the national military strategy has successfully underwritten worldwide security and stability. Today, while that strategy remains unchanged, acquiring the means to execute it faces rigorous review and challenge. We are faced with difficult choices driven by a dynamic threat, competing national priorities and restricted fiscal resources. We must proceed cautiously in implementing fiscal savings to ensure that the force structure directly supporting our national strategy of forward based, coalition defense is not weakened. To execute the U.S. Navy's missions of strategic deterrence, sea control, power projection and strategic sealift across the entire range of possible threats, we require quality, capable forces. If we are not prudent in developing and maintaining these capable forces, our ability to continue to deter global war and to successfully accomplish national objectives as they may be assigned to the Navy by the President will be uncertain.

VG-1

The United States is physically separated from the majority of its allies, trading partners and necessary raw materials by the world's oceans. This is the fundamental reality that shapes national security policies. Therefore, we require command of the seas to ensure our survival. In support of our national security policy, the United States has entered into defensive alliances and treaties with more than 40 countries worldwide. This global framework is the primary determinant for our force level requirements and ultimately shapes our shipbuilding program.

VG-2

The ships which are included in our 1990 budget request have roles across the entire spectrum of conflict, from overseas presence during peacetime to general war. At the low end of the spectrum, our peacetime operations enhance deterrence worldwide, support U.S. diplomacy, and provide for rapid response in a crisis. At the high end, our fleet ballistic missile submarines provide the threat of global nuclear response which forms the basic underpinning of our deterrent strategy.

Deterring the Soviet Union remains a primary challenge for our deployed Navy. Glasnost and Perestroika are encouraging developments, but are aimed at repairing a sagging Soviet economy. As Admiral Trost has pointed out, if these policies succeed, the military potential of the Soviet Union will eventually be greater than it is now. Their attempt to maintain full employment makes it highly doubtful that we will see any slackening of their shipbuilding efforts for some time to come.

FORCE LEVEL

Our goals for deployable aircraft carriers, battleships, and nuclear attack submarines will be delayed. The aircraft carrier, USS ABRAHAM LINCOLN (CVN 72), becomes operational in 1990 at which time we will decommission the USS CORAL SEA. We expect to achieve our amphibious lift objective in the late 1990s. Our most serious deficiency is in modern Battle Force Capable combatants. Given the present fiscal constraints, the achievement of our objective level for these ships will be delayed until after the turn of the century.

VG-4

The actual composition of a Battle Group depends upon the threat, the task to be performed, and the availability of forces, including those of our sister services and our Allies. This viewgraph (viewgraph 4) illustrates a notional deployment for CVBGs and BBBGs under a scenario involving a global confrontation or conflict with the Soviet Union.

It is more important now than ever before to maintain the forward momentum of our shipbuilding program. Recent problems with overseas base rights have underscored the importance of a Fleet which can be sent any place on the globe to show the flag or project power. We must also be concerned that our shipbuilding industry is weakened and the industrial base is eroding. Our ability to rebuild a fleet in time of crisis is considerably diminished.

VG-5

With your support, the Fleet has grown from 479 ships in FY 1980 to 565 at the beginning of this fiscal year.

VG-6

We expect to reach 568 ships by the end of 1989 as new ships already under construction replace aging, marginally capable units which are reaching the end of their useful service lives.

In 1988, we took delivery of 16 new ships and three conversions. The new ships included two OHIO Class strategic missile submarines, one of which was the first D-5 capable Ohio Class submarine, the first of the improved LOS ANGELES Class (SSN 688) nuclear attack submarine, two TICONDEROGA Class (CG 47) guided missile cruisers, one OLIVER HAZARD PERRY Class (FFG 7) guided missile frigate, two WHIDBEY ISLAND Class (LSD 41) landing ship dock, two TAO 187 Class fleet oilers, four TAGOS 1 Class ocean surveillance ships and two Oceanographic ships. The conversions included two auxiliary crane ships (TACS) and one Battleship.

VG-7

FISCAL YEAR 1990 SCN BUDGET

Our FY 1990 SCN budget includes $9.55 billion for 17 new ships and two conversions.

VG-8

The FY 1990/1991 Five Year Shipbuilding Plan has been updated to reflect Congressional action on the FY 1989 budget and revised fiscal constraints. An average of 20 new ships per year is required in the out years. This rate of construction will sustain and modernize the Fleet and pace the threat. If we do not achieve this building rate, the Fleet will shrink while becoming older and less capable against the projected threat.

VG-9

The majority of the ships in this plan are force sustainers, not force builders. They will be replacing older ships which are decreasing in capability to carry out their missions in the face of the rapidly changing threat.

The principal changes from last year's shipbuilding request include:

Deletion of two TAO-187 Class Oilers in view of the Congressional decision to maximize savings by funding the rest of that class in FY-1989.

Deletion of one SSN-688 in FY 90 and two SSN-688 nuclear attack submarines in FY 91 in order to bring on the new SSN-21 sooner.

Restructure of the TAGOS 19 profile as a result of a program change to the larger and more capable TAGOS 23. A change in the profile of the AOE-6 class to space out the options to one per year.

Deletion of the FY 1990 ARS 51 funding.

I will briefly describe each program for which we are requesting funding in FY 1990.

STRATEGIC SUBMARINE FORCE

We presently have 36 strategic submarines in the force, including 27 submarines of the LAFAYETTE, JAMES MADISON, and BENJAMIN FRANKLIN Classes, eight TRIDENT I (C-4) and one TRIDENT II (D-5) configured OHIO Class submarines. Twelve ships of the earlier classes have been converted to carry the TRIDENT I missile.

The goal of the U.S. strategic offensive forces (the TRIAD) is to deter the Soviet Union from committing aggression. This is best assured by having strategic forces which are reliable, responsive, and have sustained survivability. The submarine launched ballistic missile (SLBM) is the only strategic system possessing all of these elements and therefore it serves as the keystone to our national strategic posture. The 100 percent survivability of the SSBN under all conditions of war initiation promotes crisis stability and their endurance provides for escalation control.

On a day-to-day basis, our strategic submarines, with their SLBM's, provide the most economical and single greatest deterrent to nuclear war. These submarines carry almost fifty percent of the strategic warheads in our country's inventory for only about twenty-five percent of the Department of Defense strategic budget.

VG-10

OHIO Class TRIDENT Submarine

The TRIDENT submarine's overall capability and firepower is unmatched. Of the sixteen OHIO Class TRIDENT submarines authorized, eight are making routine patrols from their Bangor, Washington submarine base. They have completed over one hundred deterrent patrols.

The TENNESSEE (SSBN 734) is the first TRIDENT II (D-5) missile capable submarine. TENNESSEE was delivered six weeks early and is currently supporting TRIDENT II (D-5) missile testing. Seven TRIDENT submarines are presently under construction. We continue to support the President's strategic modernization plan by building at least one TRIDENT SSBN each year. All pre OHIO Class SSBNs will be retired in the 1990s. It is vital to maintain a minimum building rate of one TRIDENT per year to continue a credible, fully survivable SSBN force at sea into the next century. In the FY 90 budget we are requesting $1,137.2 million for the seventeenth ship plus $140.6 million for long lead material for the FY 92 ship.

ATTACK SUBMARINE FORCE

The Soviet Union has long had the largest attack submarine force in the world. The Soviet submarines are being built at a rate which is more than double that of the U.S. Moreover, the overall quality of this force is improving rapidly, as quieter and more powerful new classes are introduced in large numbers. Four new classes have achieved initial operational capability in the past six years.

Countering this formidable threat is the primary mission of our attack submarines. There are currently three conventional and 97 nuclear attack submarines in the Force. Of these, 40 are LOS ANGELES (SSN 688) Class submarines.

VG-11

LOS ANGELES (SSN 688) Class Submarine

Having incorporated the vertical launch tube cruise missile capability into eight of the first forty SSN-688s we made further major improvements leading to the first of the "Improved SSN-688s" commissioning in June of 1988. That first 688I, the USS SAN JUAN (SSN-751), is fully Arctic capable and has the new AN/BSY-1 combat system. The BSY-1 provides significant improvements in acoustics and weapons capabilities over any submarine combat system at sea today -- There are 21 similarly configured Improved SSN-688s currently under construction. The improved 688s which we have in production and propose to build are absolutely vital to our undersea superiority in the 1990s against the Soviet threat. However, we have exhausted the potential for further significant improvement to the SSN 688 design.

The FY 1990 budget includes $806.3 million to fully fund the final improved SSN 688 Class submarine.

These ships incorporate the Vertical Launch System (VLS) for TOMAHAWK, enhanced arctic capabilities, advanced combat system, and improved sensor and propulsion systems.

VG-12

SEAWOLF (SSN 21) Class Submarine

The FY 1990 budget requests $816.8 million in advance procurement for the long lead time nuclear propulsion plant and hull, mechanical and electrical equipment for follow on submarines of the SEAWOLF class. This new class has been designed to counter the rapidly increasing capabilities of the Soviet submarine force projected for the 1990s and beyond. It is quieter, faster and more heavily armed than any of our previous submarines and will possess increased arctic warfare capability. It will be ideally suited to deploy to forward ocean areas to search out and destroy enemy submarines and surface ships and to attack land targets. Repeated, objective and independent analyses have concluded that SEAWOLF and her sister ships will have three times the mission effectiveness of the Improved SSN-688 and will restore the commanding technological and tactical margin which historically we have enjoyed over the Soviets. There are no near-term prospects for submarine capability superior to SSN-21.

AIRCRAFT CARRIERS

Our aircraft carriers are deployed worldwide in support of our national commitments. They are capable of executing response options ranging from peacetime presence through general war. Together with their embarked air wings, the carriers have vital roles in strike, anti-surface, anti-air, and anti-submarine warfare.

In FY 88, the Congress appropriated full funding for two NIMITZ Class nuclear aircraft carriers, CVN 74 and CVN 75. Two other CVNs approved in FY 1983 are in building at Newport News Shipbuilding and Drydock Company. The first of these, USS ABRAHAM LINCOLN (CVN 72), joins the Fleet in 1990. CVN 73, 74, and 75 will replace conventionally powered carriers as they retire in the 1990s.

USS KITTY HAWK (CV 63) is one third of the way toward completing her SLEP at Philadelphia Naval Shipyard. This program will add 15 years to the service lives of selected conventional carriers.

VG-13

CARRIER SERVICE LIFE EXTENSION PROGRAM (CV SLEP)

The FY 1990 budget includes $651.2 million for the USS CONSTELLATION (CV 64) SLEP scheduled to commence in FY 1990.

SURFACE COMBATANTS

We have made great strides in the past few years in improving the quality of our surface combatants, although fiscal constraints have precluded solving our numerical shortfalls. The AEGIS Combat System and Vertical Launch System (VLS) have revolutionized the Battle Group. The combination of HARPOON and TOMAHAWK has expanded the roles of our surface combatants, complicated enemy targeting, and significantly increased the Navy's offensive power. The surface force level objectives I spoke of last year were: four reactivated battleships, 100 Battle Force AAW Combatants, 37 destroyers, and 101 frigates. The Surface Combatant Force Requirement Study completed last year and approved by the CNO, now defines the force level objective as: 120 Battle Force Capable (BFC) ships and 104 Protection of Shipping (POS) units for a total of 224 highly capable and multi-purpose ships. Battle Force Capable (BFC) ships represent our greatest shortfall.

VG-14

ARLEIGH BURKE (DDG 51) CLASS GUIDED MISSILE DESTROYERS

The lead ship of the ARLEIGH BURKE Class guided missile destroyer (DDG 51) was funded as a FY 1985 ship, and there are presently eight of these ships appropriated and under contract. The DDG 51 class replaces the aging DDG 2 and DDG 37 class destroyers which are becoming obsolete and will be retired in the 1990s. As the DDG 51 program continues, we will build additional destroyers to replace our older cruisers and to attain our Battle Force Capable (BFC) force level objectives.

The DDG 51 will be the most powerful class of destroyers ever to go to sea. It will carry the AEGIS Combat System, the SQQ 89 ASW system, VLS, TOMAHAWK, HARPOON, and STANDARD (SM-2) missiles as well as a 5"/54 caliber Lightweight Gun, the Close-in Weapon System (CIWS), and anti-submarine weapons.

Extensive topside armor placed around vital command, electronic and machinery spaces provides enhanced survivability. There is improved and redundant fire-fighting equipment to allow the ship to better withstand and repair battle damage. Acoustic, infrared and radar signatures are substantially reduced which, in combination with sophisticated electronic equipment, make the DDG 51 very difficult to detect, identify and target. State-of-the-art protective systems protect against nuclear, biological and chemical agents. Hardening systems also provide excellent protection against nuclear and thermal blast. In addition, the overall hull design will provide superior sea-keeping, mobility, speed and stability which will significantly improve operational performance in higher sea states. Internally, the ship's design allows for more efficient use of manpower and requires fewer sailors than are normally assigned to a ship of this size and capability.

The FY 1990 budget includes $3,600.7 million full funding for five DDG 51s. Eventually we desire to increase this rate to six ships per year in order to meet our requirements and to provide for optimum competition. A total of 24 DDG 51 class ships are included in the FYDP, which will bring the total inventory to 32 ships.

AMPHIBIOUS WARFARE SHIPS

Amphibious Warfare was developed and perfected by your Navy and Marine Corps prior to and during World War II, employing forces uniquely fashioned for forcible entry. There is nothing defensive about Amphibious Warfare.

In developing plans to expand the Navy and revitalize our maritime strength, we concluded that we had to increase our amphibious lift and correct deficiencies in systems and equipment which support amphibious operations. Our initiatives are designed to achieve a balance in tactical air, naval surface fire support, amphibious forces, CH-53E helicopters, assault craft, sealift, prepositioning, cargo handling and off-loading equipment and increases in ordnance and supplies.

The primary factors in determining the Amphibious Force level and ship design are the Marine Corps lift requirement and the ship to shore assets required to execute the landings. Our stated goal is to lift the Assault Echelons of both a Marine Expeditionary Force (MEF) and a Marine Expeditionary Brigade (MEB). The Assault Echelon (AE) includes the most critical assault elements needed to seize a beachhead and rapidly build up combat power ashore. These elements must be transported, landed and supported from specialized amphibious ships. The remainder of the landing force makes up the Assault Follow-on Echelon (AFOE), comprised of the troops, equipment and supplies needed to support and sustain the initial assault. These follow on landing force elements are embarked in Military Sealift Command (MSC) controlled fleet ships, which may be government owned and chartered or requisitioned from the private sector.

VG 15

LSD 41 (Cargo Variant) Dock Landing Ship

Last year two WHIDBEY ISLAND dock landing ships were delivered. Eight ships of this class are in building and the first of the Cargo Variant was funded in 1988. This year we are requesting $229.3 million to fund the second LSD 41 (Cargo Variant). This ship will transport and launch amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations. It will also provide limited docking and repair services for conventional landing craft and LCAC. The ship will differ from the original LSD 41 in that it will have additional cargo capacity and two fewer LCAC.

VG-16

Landing Craft Air Cushion (LCAC)

The FY 1990 budget includes $196.3 million for nine craft and $22.9 million for advance procurement in support of the FY 1991 program (12 craft). We plan to build 12 craft in FY 1991 and 9 in FY 1992.

The LCAC is a fully amphibious air cushion vehicle capable of operating from existing and planned well deck ships. It transports weapons systems, equipment, cargo, and personnel of the assault elements of the Marine Air/Ground Task Force both from ship to shore and across the beach.

MINE WARFARE SHIPS

The Soviet Union possesses the world's largest offensive mining capability. In the event of war, mines could be employed to deny use of harbors, straits and coastal waters, thereby jeopardizing the importation of strategic materials and the reinforcement and resupply of U.S. and allied forces in Europe and Asia. The laying of mines in the Persian Gulf by the Government of Iran was a recent example of how a modest mining effort can threaten to strangle vital shipping lanes.

For many years, our mine countermeasures capability was inadequate to meet the threat. Our oceangoing minesweepers are approaching obsolescence and are increasingly difficult and expensive to maintain. We have established a minimum objective of 31 new mine countermeasures units which, in conjunction with our MCM helicopters, will have the mission of clearing U.S. waters and strategic choke points in time of war. The MHC 51 is a new class of ships designed to perform reconnaissance, classification, and neutralization of moored and bottom mines in our harbors and coastal waters.

VG-17

MHC 51 Class Coastal Mine Hunter

The lead ship of the MHC 51 Class was funded as an FY 1986 ship. Two follow ships were funded in FY 1989, and one of these will be awarded to a competitively selected second builder later this year. Fiscal constraints have prevented us from increasing our MHC production rate in this vital warfare area. The FY 1990 budget request contains $120.3 million for the next follow on unit. A total of 14 MHC 51 Class ships are included in the five year plan.

COMBAT LOGISTICS FORCES

The expanding Fleet requires additional combat logistics forces. In addition, recent concerns over availability of overseas bases have underscored our dependence on these ships to keep our battle forces operating. Combat logistics force ships include multi-product station ships with the speed and armament to remain with the Carrier Battle Groups and single product shuttle ships to carry fuel, ordnance, stores and provisions from advance logistic bases or consolidation points at sea. The primary station ship is the AOE fast combat support ship. Shuttle ships include fleet oilers (AOs/TAOs), ammunition ships (AEs/TAEs), and stores ships (AFS/TAFS). In the event of non-availability of an AOE, one AOR and one AE may be assigned to a Battle Group.

VG-18

AOE 6 Class Fast Combat Support Ship

In FY 1987 the Congress appropriated the funds for the lead ship of the AOE 6 Class. We plan to procure a total of 11 ships of this class to meet and sustain our objective level of 15 station ships.

The FY 1990 budget includes $356.4 million for one of these ships and another is planned for a FY 1991 start.

VG-19

CIMARRON (AO 177) Class Fleet Oiler Jumboization

The Congress has approved the jumboization of four of the five AO 177 Class Fleet oilers to date. The AO JUMBO conversion program is designed to increase the fuel carrying capacity of these ships by up to 50 percent. The FY 1990 budget includes $35.7 million to convert the fifth and final ship of the class.

VG-20

TAGOS OCEAN SURVEILLANCE SHIPS

We plan to build a total of 28 TAGOS ocean surveillance ships. The first 22 ships have been appropriated. Eighteen of these are conventional monohulls and four are Small Waterplane Area Twin Hull (SWATH).

In FY 1990 we are requesting $155.8 million for a new and larger SWATH ship, T-AGOS 23 (SWATH A), which will have excellent sea keeping performance and significantly improved acoustic capabilities.

These ships will operate as units of the Military Sealift Command to collect, process, and transmit acoustic data. The SWATH configuration will improve our capability to operate in high latitudes under adverse winter weather conditions.

VG-21

OCEANOGRAPHIC SHIPS

We are continuing to address the block obsolescence of our 1960-vintage oceanographic ships. The T-AGS ships requested in the FY 90 SCN Program will replace ships that have exceeded their effective service life and are technologically inadequate for modern complex oceanographic operations. The replacement ships will be multi-mission capable -- performing ocean survey and data collection in support of fleet operations and systems development. The FY 1990 request includes $278.1 million for construction of three TAGS oceanographic vessels.

OUTFITTING/POST DELIVERY

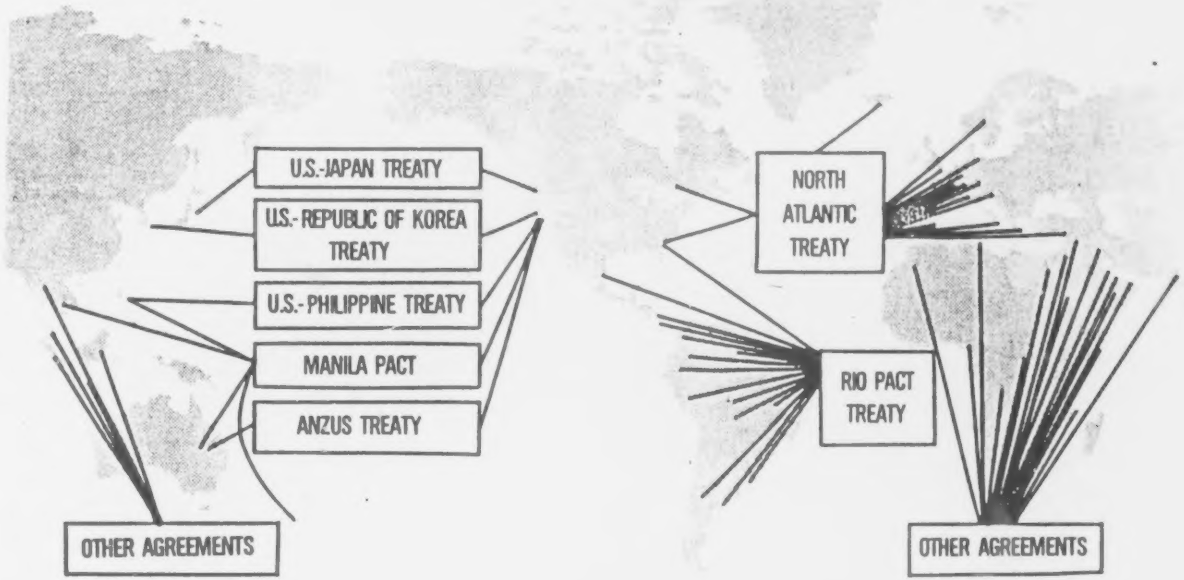
We are requesting $205.5 million in FY 1990 for outfitting. Outfitting funds purchase repair parts and consumables to fill initial ship allowances for ships approaching delivery.

The FY 1990 budget includes $134.5 million for post delivery. Post delivery funds are used to pay for all work required to correct deficiencies identified during trials or post delivery.

Mr. Chairman, that concludes my overview of the FY 1990 SCN Budget Request and update of the Five Year Shipbuilding Plan. I appreciate this opportunity to appear before your committee to assist you in your deliberations on the Defense Appropriation Bill and urge your continued strong support for our shipbuilding program.

VG-1

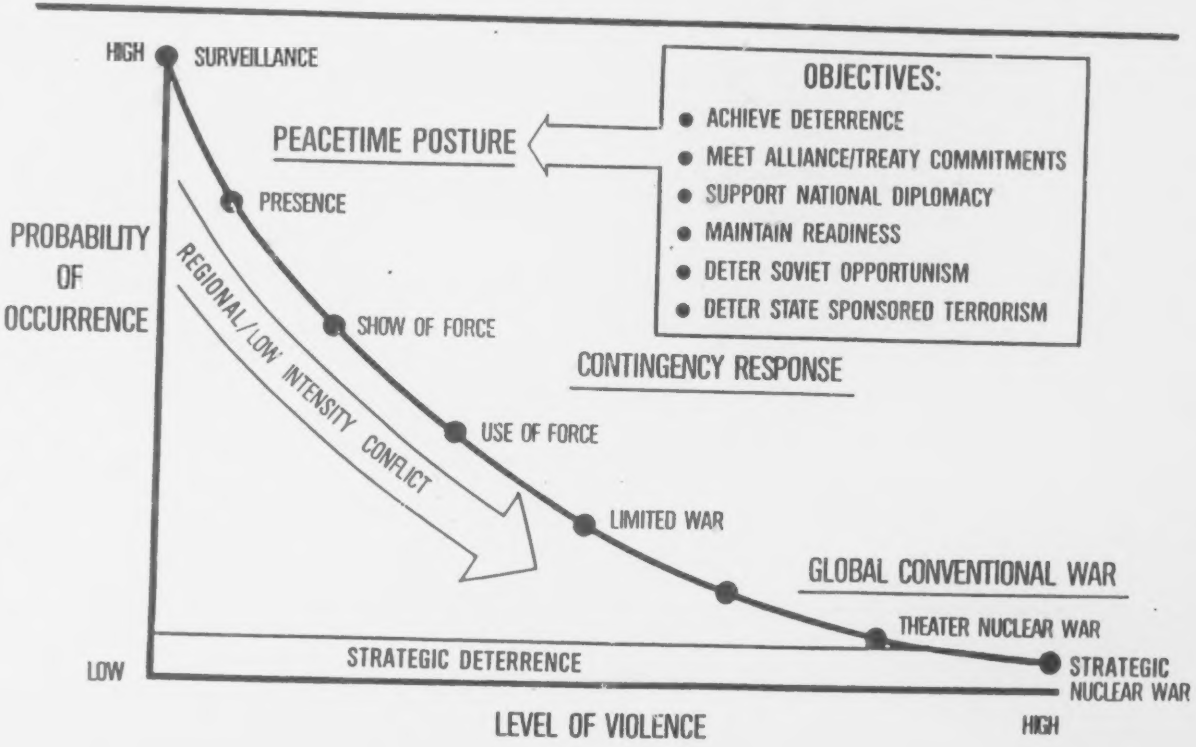
ALLIANCES, TREATIES AND AGREEMENTS


U.S.-JAPAN TREATY
U.S.-REPUBLIC OF KOREA TREATY
U.S.-PHILIPPINE TREATY
MANILA PACT
ANZUS TREATY
OTHER AGREEMENTS
NORTH ATLANTIC TREATY
RIO PACT TREATY
OTHER AGREEMENTS

FORMAL ALLIANCES AND TREATIES WITH 43 COUNTRIES
MANY OTHER SIGNIFICANT BILATERAL AGREEMENTS

VG-2

APPLICATIONS OF MARITIME POWER

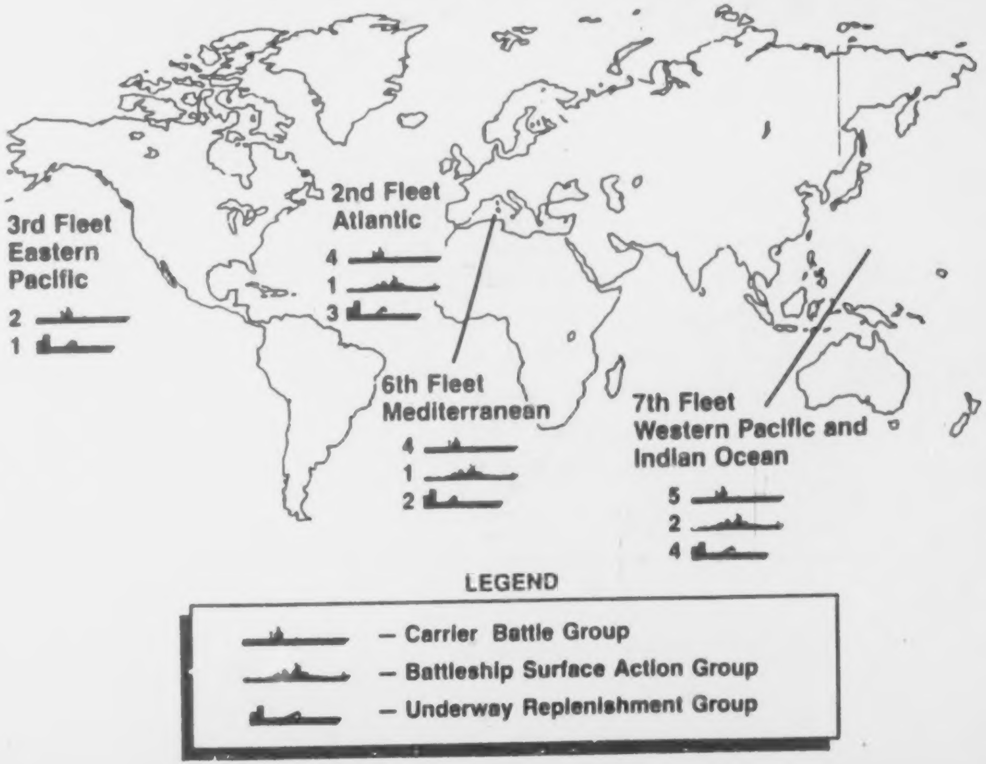

HIGH
SURVEILLANCE
PEACETIME POSTURE
PRESENCE
PROBABILITY OF OCCURRENCE
REGIONAL/LOW INTENSITY CONFLICT
SHOW OF FORCE
CONTINGENCY RESPONSE
USE OF FORCE
LIMITED WAR
GLOBAL CONVENTIONAL WAR
THEATER NUCLEAR WAR
STRATEGIC DETERRENCE
LOW
STRATEGIC NUCLEAR WAR
LEVEL OF VIOLENCE
HIGH

OBJECTIVES:

- ACHIEVE DETERRENCE
- MEET ALLIANCE/TREATY COMMITMENTS
- SUPPORT NATIONAL DIPLOMACY
- MAINTAIN READINESS
- DETER SOVIET OPPORTUNISM
- DETER STATE SPONSORED TERRORISM

VG-4

WARTIME DISPOSITION OF U.S. NAVAL FLEETS


3rd Fleet
Eastern
Pacific
2
1
2nd Fleet
Atlantic
4
1
3
6th Fleet
Mediterranean
4
1
2
7th Fleet
Western Pacific and
Indian Ocean
5
2
4
LEGEND
– Carrier Battle Group
– Battleship Surface Action Group
– Underway Replenishment Group

VG-6

NAVAL FORCE LEVELS END FY 1989

STRATEGIC SUBMARINES	36
AIRCRAFT CARRIERS	14
BATTLESHIPS	4
PRINCIPAL SURFACE COMBATANTS	208
ATTACK SUBMARINES	100
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	66
MINE WARFARE SHIPS	3
COMBAT LOGISTIC SHIPS	60
MOBILE LOGISTICS/SUPPORT SHIPS	71
TOTAL	568

VG-5

NAVAL FORCE LEVELS BEGINNING FY 1989

STRATEGIC SUBMARINES	37
AIRCRAFT CARRIERS	14
BATTLESHIPS	4
PRINCIPAL SURFACE COMBATANTS	213
ATTACK SUBMARINES	100
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	63
MINE WARFARE SHIPS	4
COMBAT LOGISTIC SHIPS	58
MOBILE LOGISTICS/SUPPORT SHIPS	66
TOTAL	565

VG-7

FY 90 SHIPBUILDING AND CONVERSION, NAVY (SCN) BUDGET REQUEST ($ IN MILLIONS)

PROGRAM	QTY	FULL FUNDING	ADV PROC	TOA
TRIDENT	1	1137.2	140.6	1277.8
SSN 688	1	806.3		806.3
SSN 21	--		816.8	816.8
DDG 51	5	3600.7		3600.7
LHD 1	--	35.0		35.0
LSD 41 (CV)	1	229.3		229.3
MCM	3	341.5		341.5
MHC	1	120.3		120.3
TAGOS	1	155.8		155.8
AOE 6	1	356.4		356.4
AGOR/TAGS	3	278.1		278.1
LCAC	(9)	219.3		219.3
CV SLEP	1	630.3	20.9	651.2
AO (JUMBO)	1	35.7		35.7
MTS	(1)	220.0		220.0
SERVICE CRAFT		45.1		45.1
LANDING CRAFT	10	11.3		11.3
OUTFITTING		205.5		205.5
POST DELIVERY		134.5		134.5
SPEC SUP EQUIP		10.0		10.0
TOTAL	17/2			9550.6

VG-8

FY 1990/94 SHIPBUILDING PROGRAM

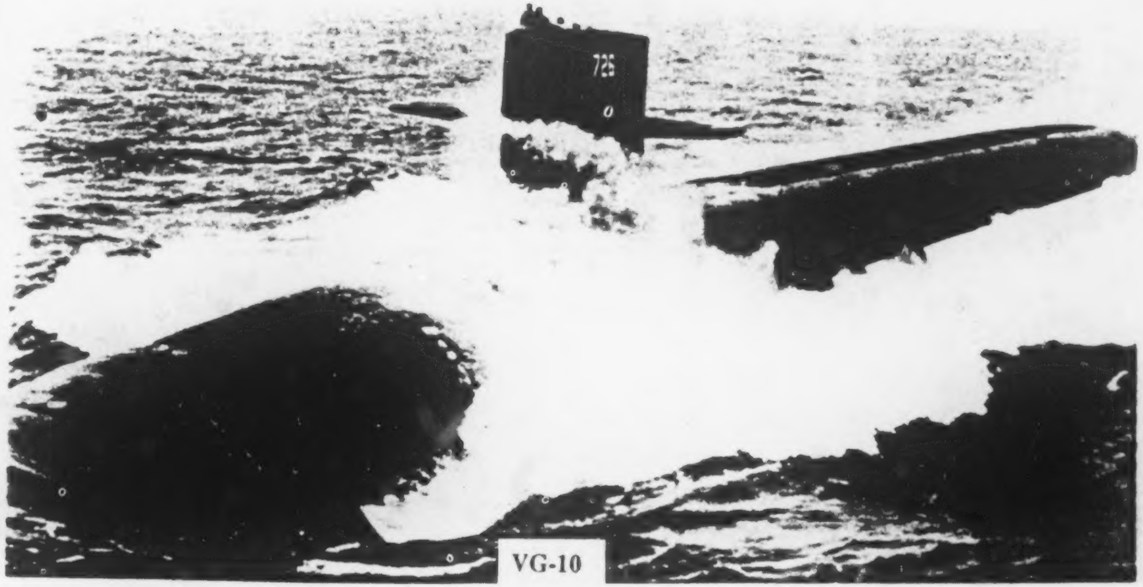
	BUDGET REQUEST		SUBJECT TO FURTHER REVIEW		
	90 QTY	91 QTY	92 QTY	93 QTY	94 QTY
TRIDENT	1	1	1	1	1
SSN 688	1				
SSN 21		2	3	3	3
DDG 51	5	5	5	5	4
LHD 1		1		1	
LSD 41 (CV)	1	1	1	1	1
MCM	3				
MHC	1	3	4	4	2
GOS			1		2
TAGOS	1		2	1	2
AE				1	2
AOE 6	1	1	1	1	1
AR					1
ARS					1
AGOR/TAGS	3	1	2	2	1
LCAC	(9)	(12)	(9)	(9)	(9)
LANDING CRAFT	(10)	(10)		(1)	(6)
NEW CONST.	17	15	20	20	21
V SLEP	1			1	
AO (JUMBO)	1				
MTS	(1)		(1)		
CONVERSIONS	2	0	0	1	0

VG-9

FORCE SUSTAINERS

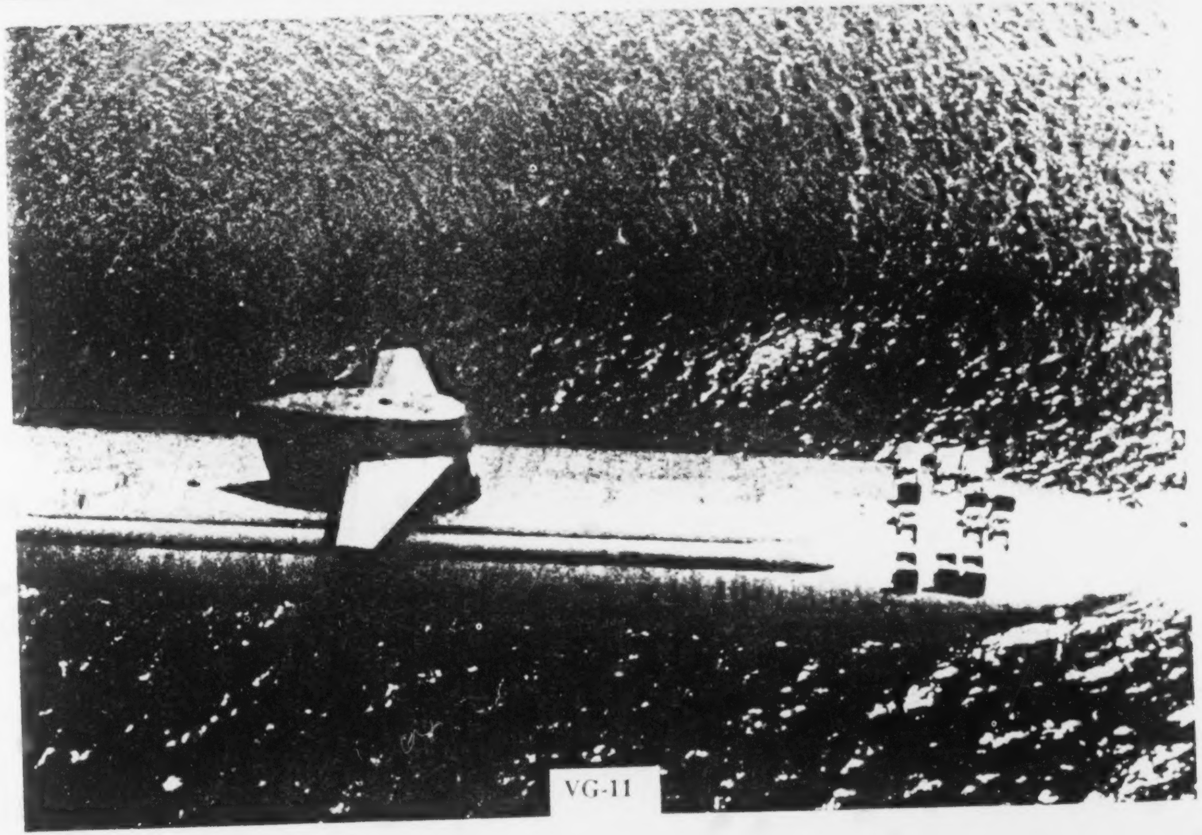
CLASS	NO. IN FYDP
TRIDENT	5
SSN 688	1
SSN 21	11
DDG 51	24
AO JUMBO	1
AE 36	3
AOE 6	5

TRIDENT SUBMARINE - SSBN



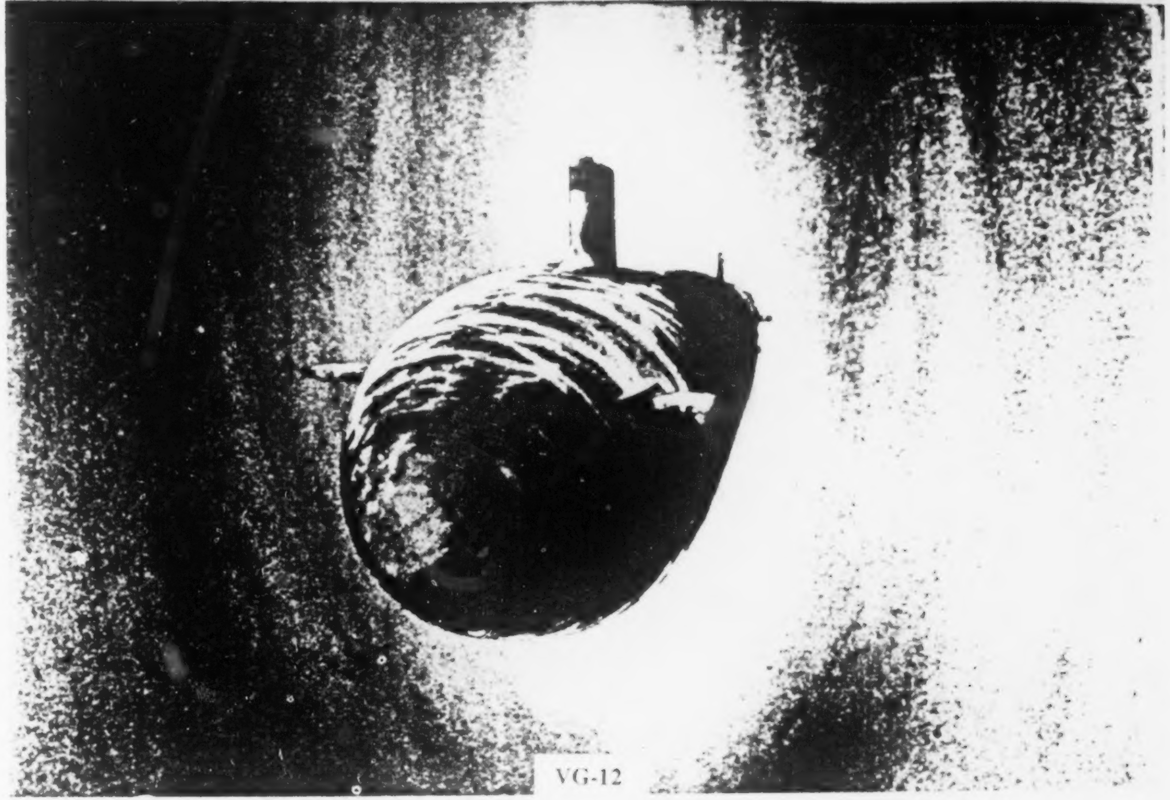
VG-10

NUCLEAR ATTACK SUBMARINE - SSN 688



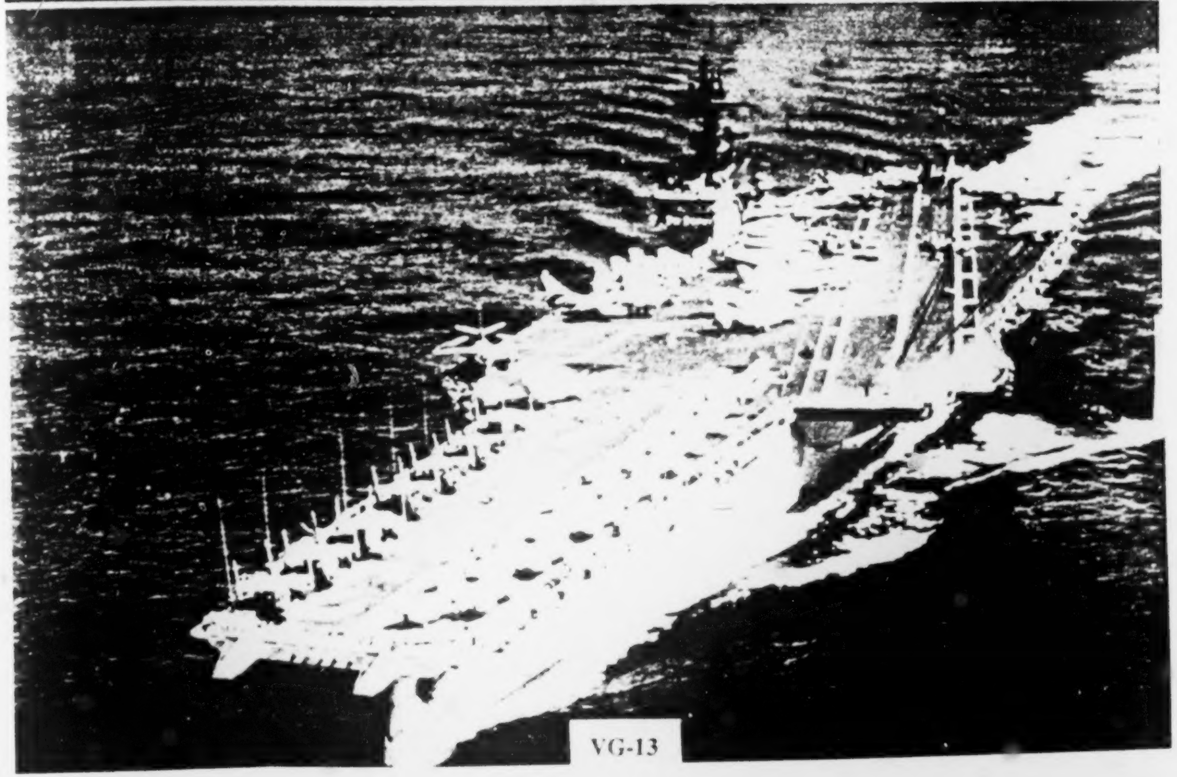
VG-11

NUCLEAR ATTACK SUBMARINE - SSN 21



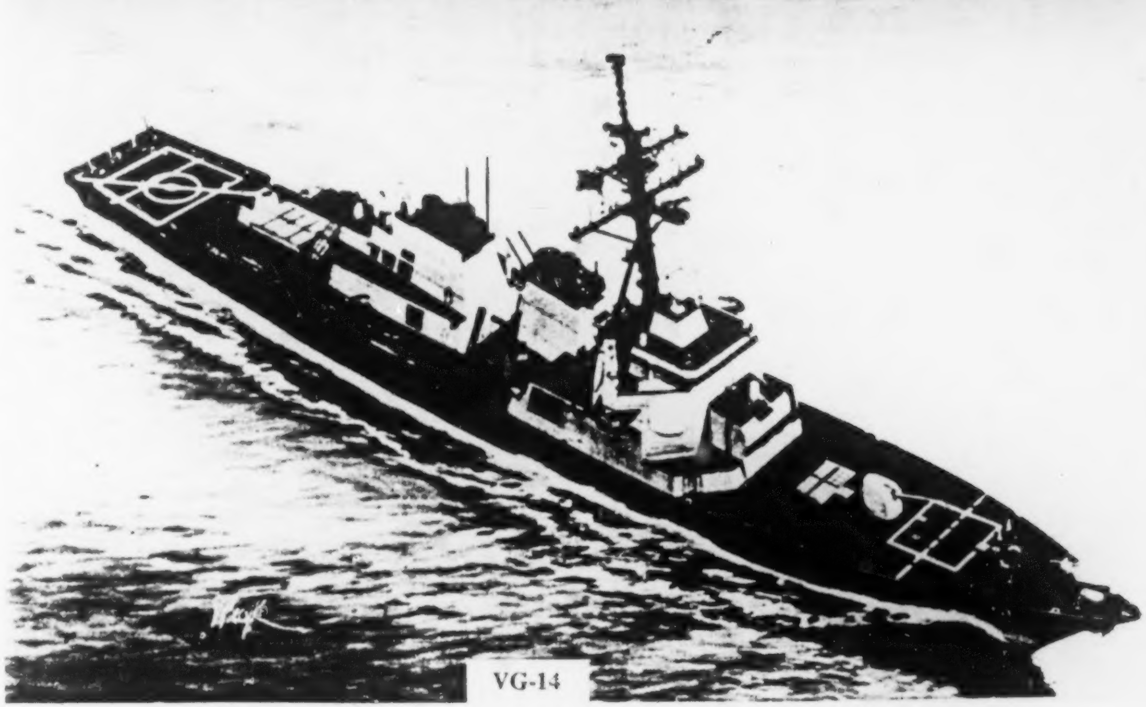
VG-12

AIRCRAFT CARRIER
SERVICE LIFE EXTENSION PROGRAM-CV SLEP



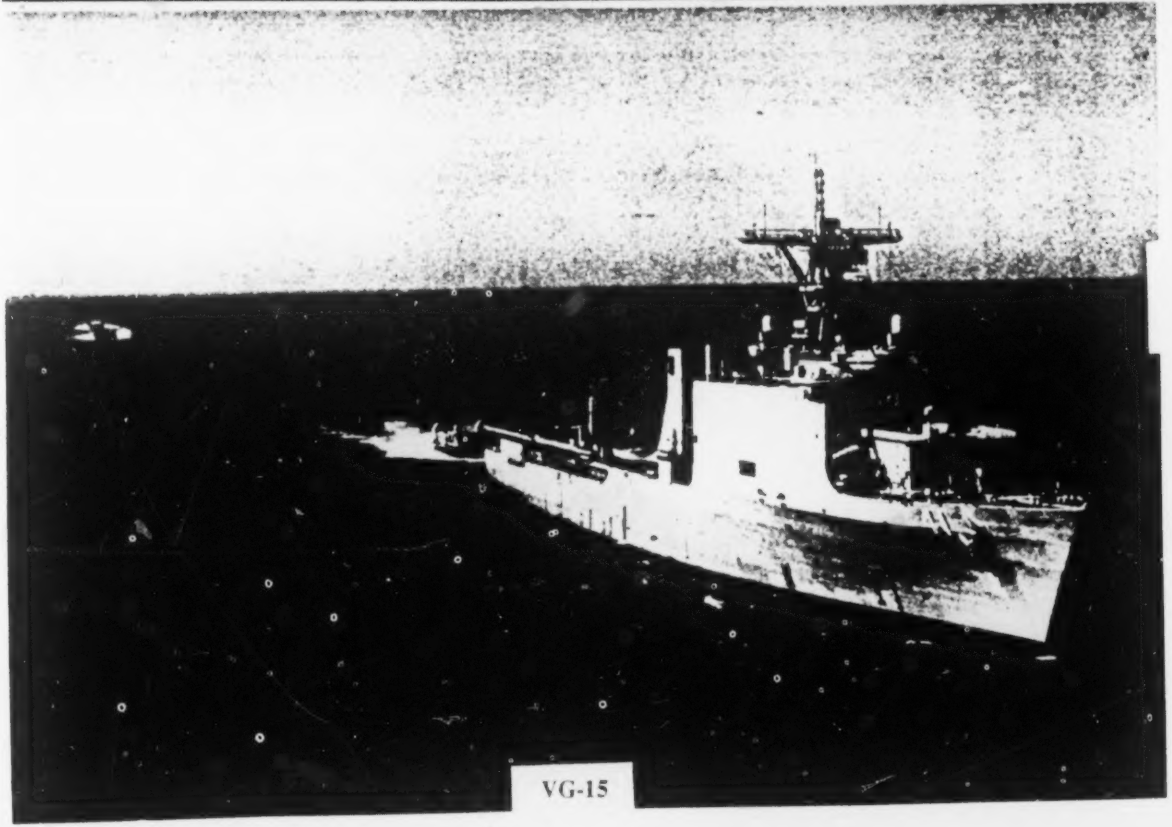
VG-13

GUIDED MISSILE DESTROYER — DDG 51



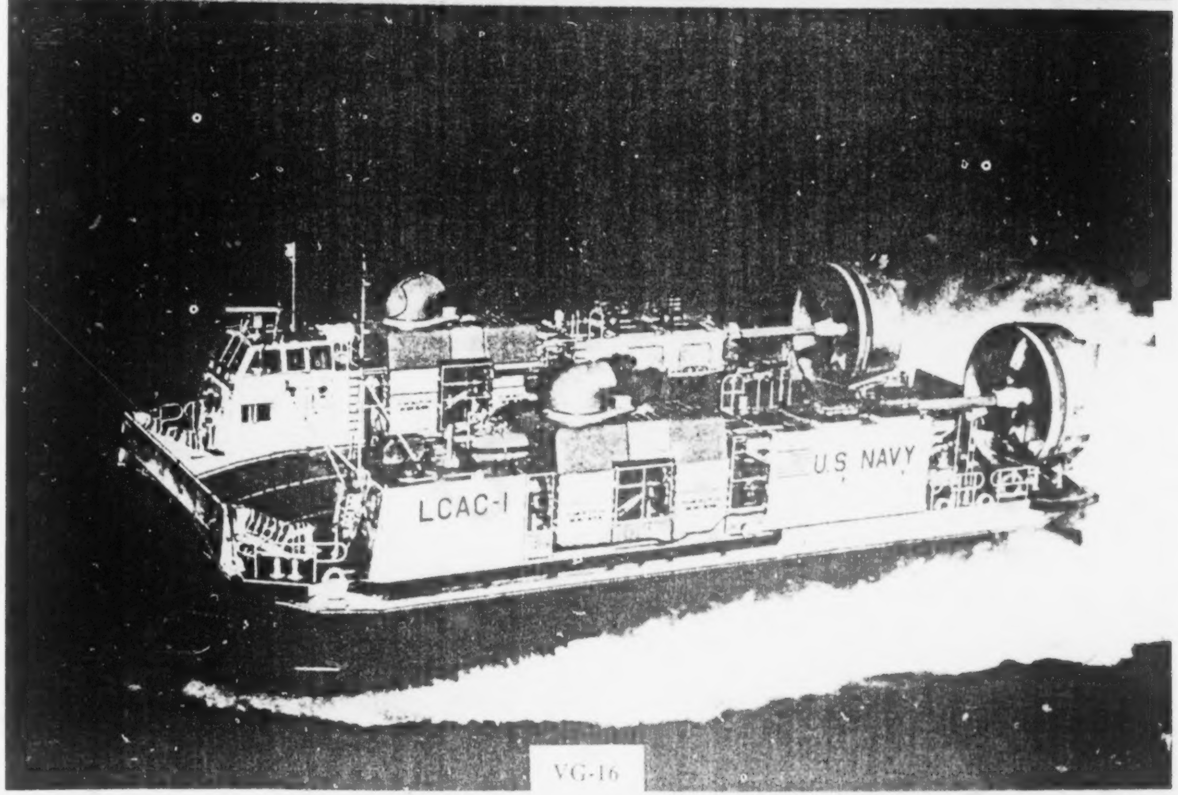
VG-14

DOCK LANDING SHIP — LSD 41 (CV)



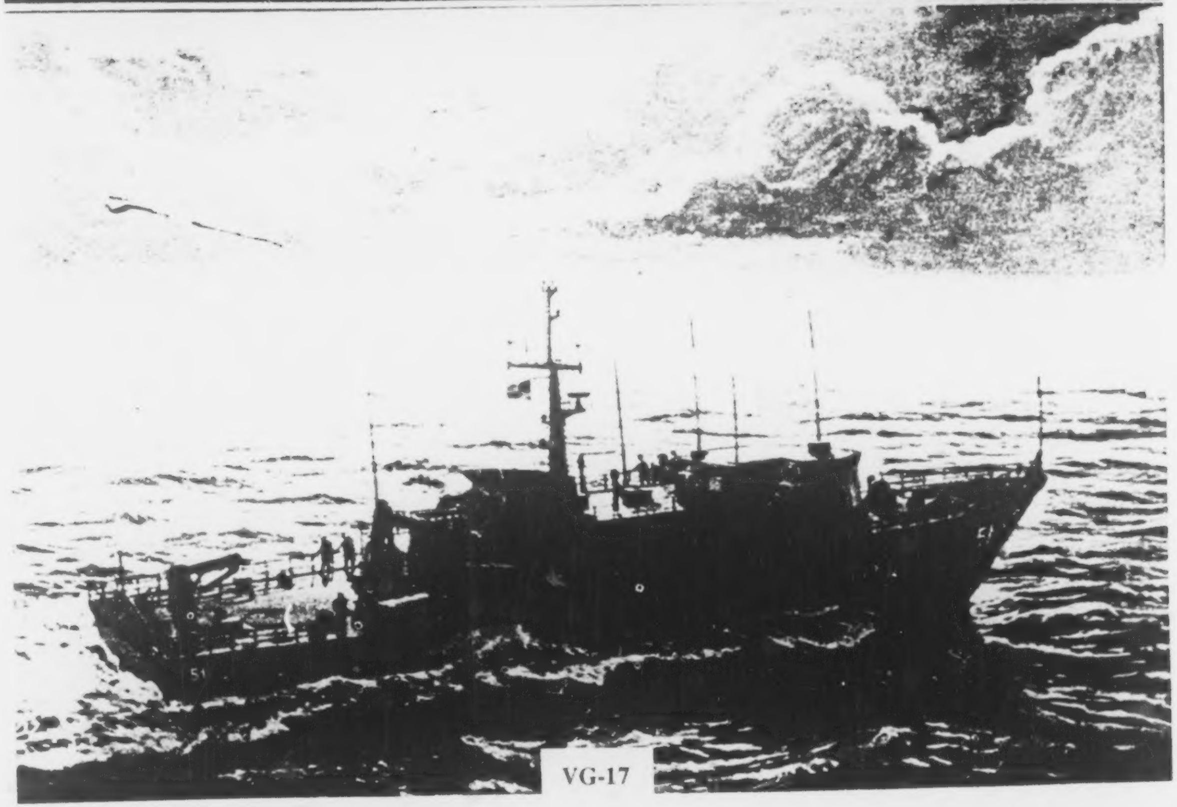
VG-15

LANDING CRAFT AIR CUSHION (LCAC)


U.S. NAVY
LCAC-I

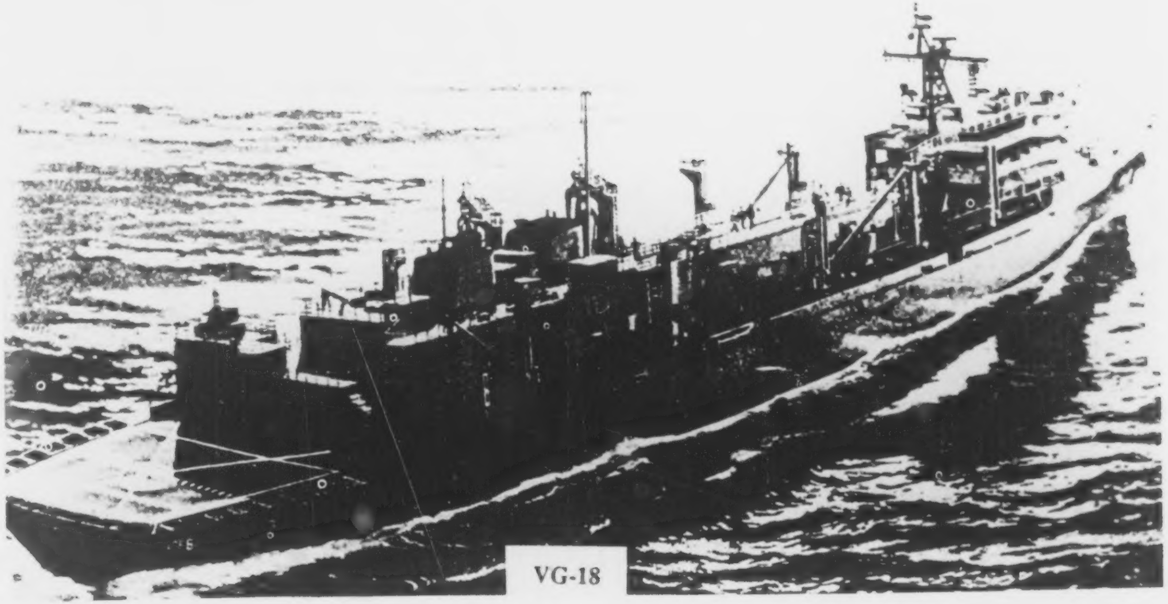
VG-16

COASTAL MINE HUNTER — MHC 51 CLASS



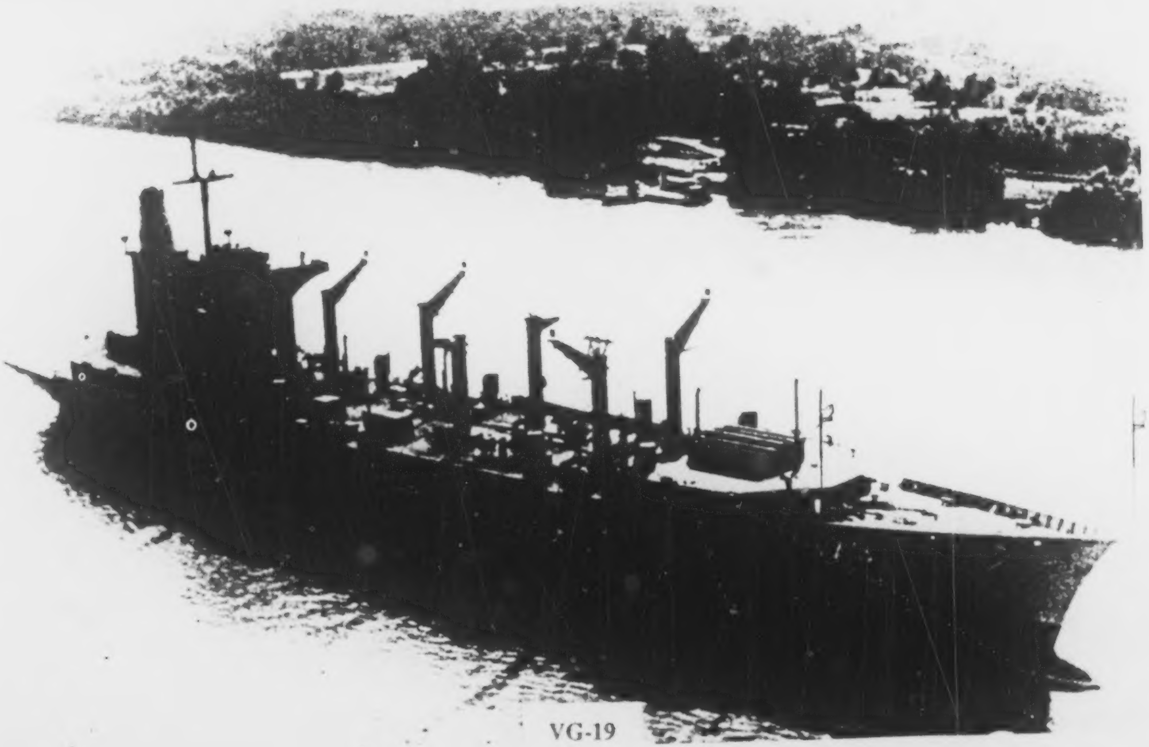
VG-17

FAST COMBAT SUPPORT SHIP-AOE 6



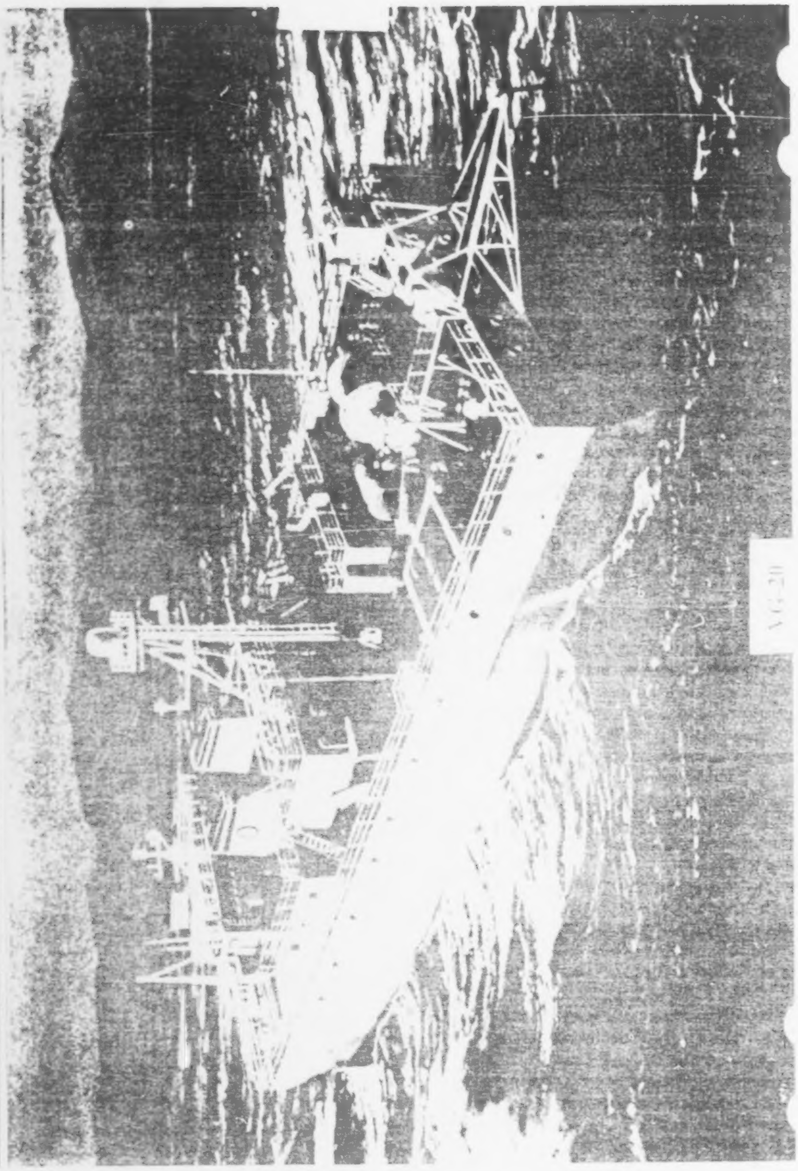
VG-18

FLEET OILER JUMBOIZATION - AO 177

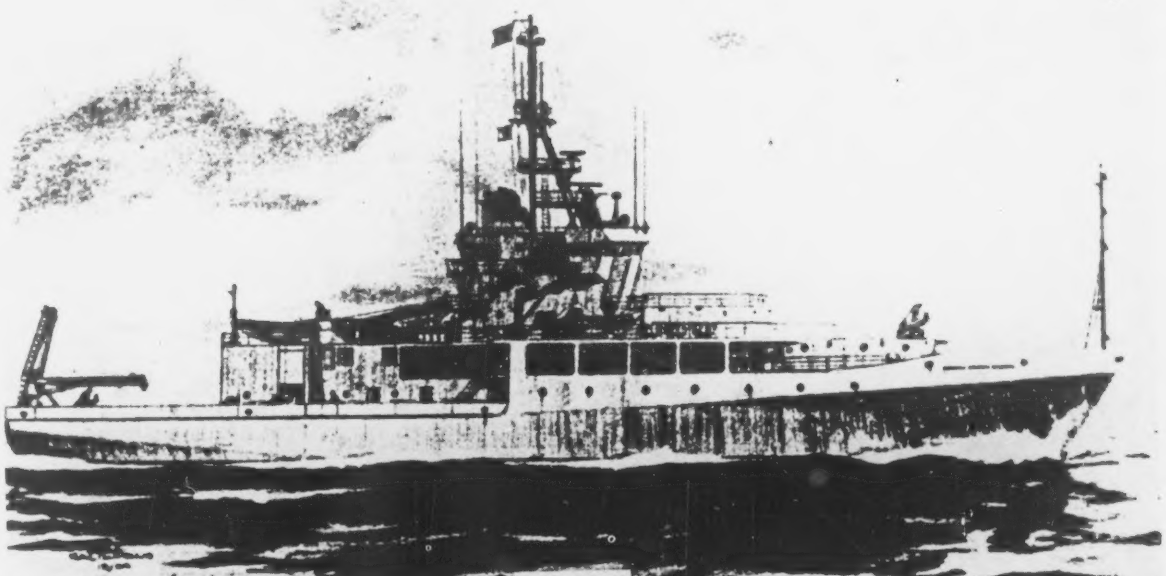


VG-19

OCEAN SURVEILLANCE SHIP — TAGOS



OCEANOGRAPHIC SHIPS



VG-21

SHIPBUILDING AND CONVERSION, NAVY

Admiral **Nyquist**. Mr. Chairman and distinguished Members of the Committee, I am Vice Adm. John Nyquist, the Assistant Chief of Naval Operations, Surface Warfare, and the sponsor for the shipbuilding and conversion Navy appropriation.

It is my privilege today to present the Navy's SCN budget request for fiscal year 1990 and to review our 5-year shipbuilding plan.

As you said, Mr. Chairman, to execute the Navy's missions of strategic deterrence, sea control, power projection, and strategic sealift, we require quality, capable forces in the right numbers.

If we fall short, our ability to continue to deter global war and to successfully accomplish national objectives, as they may be assigned to the Navy, will be uncertain.

While less threatening than in the immediate past, deterring the Soviet Union remains the primary challenge for our forward deployed Navy. In proposing budget reductions driven by the Federal deficit, the Secretary of Defense has decided to maintain our existing level of 14 deployable carrier battle groups.

This means we will continue to experience a shortfall in satisfying our existing overseas commitments.

Also, the early retirement of 32 antiair warfare capable surface combatants and the transfer of 24 antisubmarine frigates to the reserve force will reduce the number of surface combatants in each battle group.

Secretary Cheney advised the Congress during his presentation of the budget that operational commitments may have to be reduced in order to maintain our own commitment to our sailors and their families, to provide a minimum of 1 year in home waters between 6 months overseas deployments.

Our most serious deficiency is in modern battleforce capable antiair warfare combatants, which are currently at only 64 percent of our force level goals. The Arleigh Burke DDG–51 class guided missile destroyer addresses this shortfall. It is by far the most powerful destroyer ever to go to sea and combines the AEGIS antiair and the SQQ–89 antisubmarine combat systems with an impressive array of weapons: Vertical launch cells carrying SM–2 surface to air missiles, Tomahawk antiship and land attack cruise missiles, along with Harpoon and the rapid fire, light-weight, 5 inch 54 caliber gun, and close-in weapons for hard and soft kill of enemy cruise missiles.

From her keel up, the Arleigh Burke class features major advancements in survivability, including all steel construction, lower detectability, and improved protection for our sailors.

Later ships of this class will incorporate technological and warfighting advances in block upgrades.

Given the present fiscal constraints, the achievement of our objective level for these ships will not occur until after the turn of the century.

Antisubmarine warfare remains the Chief of Naval Operations No. 1 war-fighting priority. We are addressing that objective by building into the Arleigh Burke the most advance surface combatant antisubmarine warfare suit ever designed.

In our submarine program, Sea Wolf, the SSN-21, will be the world's premier attack submarine. Sea Wolf will be quieter, faster, and more heavily armed than any of our previous submarines, and will have increased Arctic warfare capability.

Both the DDG-51 and the SSN-21 have been designed to allow for the installation of future developments in ASW technologies. With the additional capability of the advanced T-AGOS ships being delivered to the fleet, we are building a formidable ASW team.

For some years, our mine countermeasures capability has been falling behind the threat. Our ocean-going minesweepers are nearly obsolete and are increasingly difficult and expensive to maintain.

We have established a minimum objective of 31 new mine countermeasure ships which, in conjunction with our mine countermeasures helicopters, the MH-53 Echo Sea Dragon, will have the mission of clearing U.S. waters and strategic choke points in time of war.

The MCM-1 Avenger class is a fully deployable, ocean-going mine hunter killer ship, designed to perform reconnaissance, classification, and neutralization of more than bottom mines.

The last three MCM ships are being requested in this budget.

On a personal note, I served for 2 years in the 1950's in our great, old, ocean-going minesweepers. I have also observed the Avenger, lead ship of this class, up close and personally, and I can attest to you, Mr. Chairman, to the quality and the capability of these fine ships.

The smaller MHC-51 class, the Osprey, is designed to perform the same mine countermeasures mission in harbors and coastal waterways. The fourth of our planned 17 MHC's is also in the fiscal year 1990 budget request.

With the MCM-1 and the MHC-51 classes, we no longer have to sweep for mines hour after hour, day after day. These ships give our mine warfare forces the ability to safely search out and destroy moored and bottom mines, thus rapidly clearing vital waterways.

Turning now to our surface Navy research and development efforts, while not yet ready for inclusion in a shipbuilding plan, our look at the future tells us that we can expect some revolutionary changes. In fact, we call our ongoing study just that: Revolution at Sea—2020.

It is drawing the blueprint for the twenty-first century combatant. We are identifying those technologies which must be pursued now to insure that they will be available when needed.

Fiber optics, electric drive, improved engines, composites, and changing hull shapes are just some of the programs that will reshape the ships of the future.

At the same time, our near-term R&D programs retain our edge over the emerging threat.

Mr. Chairman, that concludes my overview of the fiscal year 1990 SCN budget request and a quick look at our surface Navy research and development plans. I appreciate the opportunity to appear before your committee and I urge your continued strong support for our shipbuilding programs.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you, Admiral.

CARRIER AIR WINGS

In looking over your fiscal year 1990 request, am I correct to conclude that your requirement for service combatants is based upon 15 deployable carrier groups?

Admiral **Nyquist**. The surface force combatant requirement study, Mr. Chairman, was based on a level of 15 carrier battle groups. However, for the near-term, certainly, and for the rest of this decade and into the 1990's, we foresee the need to build five to six of the Arleigh Burke DDG-51's each year.

We have not taken another look at the requirement study. One might even predict that looking at the threat, you might need more surface combatants if you reduce the number of carriers.

But, for now, we see a requirement to build certainly five, and eventually six, of these Arleigh Burke class AAW combatants per year.

Senator **Inouye**. Will we continue to maintain 15 carrier air wings?

Admiral **Nyquist**. AOE's, sir?

Mr. **Pyatt**. Air wings.

Admiral **Nyquist**. Air wings.

We have gone to a force level of 13 active and two reserve air wings, sir, with a reduction to 14 carriers.

Senator **Inouye**. Will the Navy still maintain its goal for 15 carriers, deployable carriers?

Admiral **Nyquist**. Yes, sir.

I believe the long-term goal will not change. As I am sure the CNO will tell you, the JCS requirement for carriers is over 20.

I think in looking at the immediate future and the budget reductions we had to make, the Secretary of Defense decided to stay with the 14 we have now. But I believe certainly that in looking ahead in the long run, that requirement has not changed. We are just going to have to be delayed in achieving it for the near-term.

Senator **Inouye**. I understand that Marine squadrons regularly deploy on carriers. Are these units counted as part of the Navy 15 carrier air wing requirement?

Admiral **Nyquist**. No, sir; they are not.

They are part of the combined Marine expeditionary force.

Senator **Inouye**. So it's not part of your carrier wing?

Admiral **Nyquist**. No, sir.

SEALIFT

Senator **Inouye**. Several witnesses have appeared before this subcommittee concerned with our national sealift shortfall. Many of them have argued that we will not be able to fully meet our defense sealift requirements established by DOD.

Are their concerns valid?

Admiral **Nyquist**. I'd like Mr. Pyatt to answer that.

But I think there are valid concerns about sealift. Without taking his comment away from him, since 1980, the Navy has invested nearly $7 billion into sealift. Our position is yes, we are concerned about sealift, but it transcends just being a Navy problem, Mr. Chairman. It is a national problem.

We believe that we have invested what we can do in a balanced budget into sealift.

Senator **Inouye**. According to our plan, in case of emergency, we look upon American bottoms and other commercial sealift capability. But do you believe we can count on them?

Admiral **Nyquist**. Well, I think we are going to have to, Mr. Chairman. To the extent that they are out there, I believe that they will be part of our sealift and will serve that role for us.

Senator **Inouye**. The Navy funded the conversion of several sealift ships in the 1980's. What is the peacetime role of these ships?

Admiral **Nyquist**. Mr. Chairman, they are forward deployed. They store materials needed for our forward deployed forces. They are mobile. They get underway on a regular basis, to insure that those ships can get underway and that they are manned properly. They do maintain for us Marine equipment for our forward deployed Marine expeditionary forces.

ATTACK SUBMARINES

Senator **Inouye**. The Navy is starting a new, larger, faster, quieter, attack submarine, the Sea Wolf. This being the case, what is the reason for this last 688 purchase?

Admiral **Nyquist**. We have an overall requirement, Mr. Chairman, for 100 attack submarines, and the 688 represents the finest attack submarine in the world today.

We believe that it is a natural progression to go from the 688 to the SSN-21, as the 688 replaces our older 594 and 637 class submarines.

Senator **Inouye**. Have we not met the 100 goal yet?

Admiral **Nyquist**. We are just about at that goal, Mr. Chairman. But we are maintaining a steady pull as the older submarines begin to retire.

688 CLASS SUBMARINES

Senator **Inouye**. I have been told that several 688 class submarines are behind schedule in construction.

What is the cause of the delays?

Admiral **Nyquist**. I would defer to my colleagues, Mr. Chairman.

Senator **Inouye**. Admiral?

Admiral **Hekman**. The schedule delays are primarily due to the builder's inability to apply the necessary assets to remain on the schedule. These are fixed price contracts that the builders are under. There were very optimistic bids that came in on these ships. In order for the builders to maintain their profitability and stay within the contract prices, they have applied the assets that they feel they can afford.

In addition to that, sir, there have been some changes in the ships that the Navy has applied in the combat systems area on the later 688's that have added to the building schedule. Those are not related to the contractor's ability for assets. They are related to our changes.

These include upgrades in the combat system, upgrades in some of the propulsion plant areas, to remove weight from the ship, and upgrades in the sonar.

Senator **Inouye**. Then how much more will it cost to complete this program?

Admiral **Hekman**. Sir, I will have to give you an answer for the record. I cannot give you a decisive answer for the entire program because that is going to be the result of the final settlement with the builders. We have not yet settled on their request for equitable adjustment in all cases.

Mr. **Pyatt**. But basically, our estimate on the submarine program is within the funds that we have available. There may be some juggling around between years. But, remember, we started out with very low prices. Some have risen on the share line above the target price. But our estimates still are within the funds that are within the Navy.

It is close and that may not be true next year. But it depends on the progress with the firms and what we settle on in these areas of equitable adjustment.

[The information follows:]

The final SSN 688 Class submarine, including closeout costs for the class, will require $806 million in fiscal year 1990. The Navy is reviewing the execution status of the SCN appropriation to determine if previously appropriated funds are adequate to pay the over target cost increases for ships under construction. Additionally, Newport News Shipbuilding is submitting a request for equitable adjustment (REA). The Government's liability has not yet been determined.

Senator **Inouye**. I thank you very much.

Before I call upon the Secretary, Senator Stevens, do you have any statement at this time?

Senator **Stevens**. Mr. Chairman, I am sorry I was engaged in another meeting and could not be here at the opening.

I am pleased to be here to hear the Admirals and Secretary Pyatt.

I have no comments, no statement, at this time.

Senator **Inouye**. Now may I call upon Secretary Pyatt.

STATEMENT OF HON. EVERETT PYATT, ASSISTANT SECRETARY OF THE NAVY (SHIPBUILDING AND LOGISTICS)

ACCOMPANIED BY VICE ADM. PETER HEKMAN, U.S. NAVY, COMMANDER, NAVAL SEA SYSTEMS COMMAND

Mr. **Pyatt**. Thank you, sir.

If I may, I would like to submit my testimony for the record and cover a few high points because I know you have questions.

Senator **Inouye**. Without objection, it is so ordered.

Mr. **Pyatt**. First of all, I would like to thank this committee again for the leadership that you have shown in helping us maintain the Navy and build the Navy. It was an initiative that began here on the funding of two carriers. That has worked out extremely well, and I will talk about that in a little while.

Having those big, important ships behind us I think makes way in these tougher times so that we will be able to pick up the other ships that we need and live within the lower budgets that are around.

One thing that we do not talk about too much is how much the Navy has changed in the last several years as far as readiness. We started out a few years ago with a Navy that was not too ready. We have improved substantially, 100 percent by one set of numbers, and the Navy air squadrons by a factor of three. That has been the direct result of adequate funding and good management on the part of the Navy.

We have talked a little bit about carriers. I know there could be a carrier issue again regarding the overhaul of the *Enterprise*. But I would like to point out that the Navy deployable carrier force was pared from 15 attack aircraft carriers and nine ASW carriers in 1968 to 12 multipurpose carriers by 1980.

As a result, one aircraft carrier was forced to serve an 8-month, uninterrupted Indian Ocean mission, in the midst of the Iran crisis. You have heard about this many times. But this is one of the reasons that we feel that carriers are so important and the battle group that goes with them is so important. When you just tick off some of the events that have occurred, where carriers were used, the Achille Lauro, the Libyan bombing in 1986, support of the Persian Gulf are just recent examples.

I know that many of you have other examples of your own. We really think these ships are the backbone of the Nation's ability to keep the peace and the Navy's ability to support the national strategy.

One of the things that I have heard around is because of recent Soviet peace initiatives, some argue that defense expenditures should be cut, and one of the things that should be cut is the Navy.

We think that is wrong because modern ships, as you know, take years for construction. The world can change very much in a few years, and if you don't start one, there is no chance to finish it.

So, as you consider the appropriations that we have asked for, I hope that you will consider that fact of long, long lead-times involved.

I would like to review some of the shipbuilding programs that we have had here before. I try to do this just to keep up to speed.

LCAC

Last year, on the LCAC program, Congress appropriated 15 craft. They are under contract with the two builders, and both are doing very well. We think that this is another example where competition has helped solve cost problems as well as resolve technical problems, and in the process, accelerating the introduction of this dramatic capability to the Marine forces.

MINE WARFARE SHIPS

Mine warfare ships—you have been through our problems with those. The MHC-51, the first ship, is well under construction. The hull is nearly finished. I think it is going to be a dramatic ship with an advanced capability that we have not seen before.

We plan to establish a second shipbuilder for the competitive award of one of the 1989 ships. Unfortunately, this program is a program that took a cut. In the budget adjustments, we lost a couple of ships, and now just have one in the program. We are going to have to manage around that problem.

SSN-688

On the attack submarines, we are seeking construction for the last 688, as the chairman noted earlier, to move into the SSN-21 in 1991.

FLEET OILERS

On fleet oilers, TAO's, last year, in 1989, we were funded by the Congress to buy out the program at a cost efficient production profile. It has been a difficult acquisition. We first started out trying to split the program, found out that when the prices came in, we did not have the money to split the program; went back out, allowing all parties to play, and then got into some significant troubles. We have since managed to award the ships.

It was just simply that we did not have the money to carry out the strategy of splitting that we started out with.

DDG-51

On destroyers, the program is coming along very well now. The lead ship is on the ways at Bath. It looks extremely fine. I think the Staff Director was up there not too long ago with me and saw the ship. It will be launched toward the end of the summer. I think that some of the design problems that we have talked about in prior years are now behind us, and I think we are about to set off on a very strong program.

Regarding the AEGIS combat system, it is amazing what competition does when you start to introduce it. We have seen the results already, without ever getting into competition.

OCEAN SURVEILLANCE

On ocean surveillance, I think one of the programs that we are most proud of is the ability to take commercial type ships with TOW, antisubmarine surveillance arrays behind them, and get extremely good results. This committee helped us a couple of years ago in moving to the SWATH design, which is really designed to operate in the northern latitudes and in rough water, and to let people do their jobs.

The first ship is coming along. We expect to expand it to a little larger ship with advanced surveillance capabilities in the next class in 1990.

PATROL BOATS

Regarding coastal patrol boats, last year you provided $100 million to get boats for the special warfare people. We are now trying to get that. It was an unusual appropriation that you gave us. It was a 1-year shipbuilding appropriation. We are running like mad, trying to get them under contract, and it is going to be a close call, by the end of the year. But we believe there are several good ideas available, and we are pursuing this on a full and open competitive basis.

COMPETITION

Competition is our style of doing business. You have heard me say this before, but I am just extremely proud of all of the people in the Navy who have helped to implement the Competition in Contracting Act. The return has been tremendous.

Our competition percentage rose from 27 percent in 1982, to 56 percent in 1988; currently, in 1989, it is about 60 percent.

This was achieved by competing 92 percent of Navy contract actions in 1988, contrasted with 30 percent in 1982.

To me, that says that we are giving people of the United States the best opportunity to provide their goods and services and an open opportunity. I think what we have seen out of it has been new creativity and new ideas.

You know that in the shipbuilding area we have been able to save some money. Our current estimate since 1983 is $9.3 billion under the President's budget. A portion of that was negotiated away during various markups, but it was still programmed, money that did not have to be spent, and you got the same program that was presented in the budget.

Let me give you some examples. In the CG–47, there was $1.7 billion in shipbuilding savings. Introduction of a second source for the Navy standard missile generated savings of $660 million through fiscal year 1994. In 1 year alone, we got two free shiploads of missiles. I think that is quite a credit to American productive capability.

The list goes on.

So, I think it has really helped produce the things that we have tried to produce and use the money that you appropriate wisely.

Issues have been raised about overruns in Navy shipbuilding, and there are overruns. There are overruns above the target price of contractors. But, as I said earlier, our current estimate is that the Navy's share of this is within the funds that have been appropriated for the purpose.

We do not expect to have to come back.

I also said and have said for the last couple of years that it is close. But, when you take a look at the balance of the possible overruns of $200 million or $300 million, compared to the $9.3 billion that we have had in savings, I hope you will grant us the chance of a little bit of an error here and perhaps help balance the books if the time should come.

SHIPYARD INDUSTRIAL BASE

We had some discussion on shipyard industrial base, and I know you want to pursue that in questions. I would just like to kind of outline the situation as I see it.

The size of the Navy fleet has increased about 20 percent from 1980, from 479 ships to more than 568 today.

This growth was accomplished at a time critical for the U.S. shipbuilding industry. Both domestic and worldwide demand for commercial, new ship, and offshore oil rig construction collapsed in the late 1970's and early 1980's.

Increased requirements for domestic construction and conversion of U.S. naval vessels provided an interim safe haven for most of our efficient shipyards in an otherwise internationally noncompetitive industry.

More Americans are employed today building only Navy ships than were employed building both Navy and commercial ships as recently as 1972. Over 96 percent of today's shipbuilding production workforce is performing Navy work, contrasting with 57 percent in 1972, and 76 percent in 1980.

Navy ship repair accounts for 62 percent of the repair work in the active base, contrasted with 45 percent in 1972, and 51 percent in 1980.

I think a summary of all of this is that the shipbuilding and ship repair industrial base that exists in this country exists because of the Navy right now. The oil rig business, as far as I can tell, is still very dead. For a long time, it was a major component of the shipyard work, and there is not very much there now.

I know the initiative of Senator Stevens some years ago, his Merchant Marine initiative. I think it was a wise initiative. Unfortunately, we could not get the administration to go along.

READY RESERVE FLEET

In sealift, you mentioned earlier that the Navy procured 51 ships for the Ready Reserve ships, including some that were only 5 years old. These are very fine roll-on/roll-off ships, capable of handling Army unit equipment in a deployable mode.

We have I think almost two divisions worth of lift that are stored away in various points in the country. As you drive around, you might see big, grey ships with red, white, and blue stripes on the stacks. That is part of the Ready Reserve fleet.

They are currently managed and supported by MARAD, and we are pretty much out of that business. But it was an initiative that we took. We saw the market and saw the opportunity to get some ships that were not commercially viable and make them militarily useful.

PUBLIC/PRIVATE COMPETITION

Public/private competition I think was an idea that started here, in one of these hearings, in 1985, in this room. It has worked out very well. I think it has been a stimulus to all sectors. It has been a stimulus on the side of the Navy yards, to have to think about running an efficient industrial enterprise, and many of the yards have risen to it. It has been a stimulus on the part of the private sector, that here are some ships that they might not have seen otherwise that are now available for their bids.

The Navy has conducted and awarded 47 overhauls and short availabilities through 1988 as part of this program. Private shipyards were awarded 27, and 20 were awarded to the public, to the Navy yards.

It is about 8 percent of the entire maintenance and modernization budget for the period 1986 to 1988. So the program grew very much beyond the initial test that was envisioned here.

As I look at the future, our challenge is to continue our cost effective, force sustaining product lines within the fiscal constraints that we all know are here. As I reported last year, our best prospect for achieving this is to continue the force building plan on two fundamental principles. These are to maintain a long-term, stable economic production plan for each ship type required by the operating forces; and use head-to-head competition to foster cost reduction, control inflation, and improve quality.

One of the direct results, I would like to note here, out of our competitive work has been a dramatic improvement in quality. When people get on a tight contract, they find out they don't have the money to make mistakes and they learn how not to do it.

We have applied these principles and, as I have mentioned before, under-running the President's shipbuilding budgets by about $9.3 billion.

We are still the most important element in maintaining the Navy, the national shipbuilding repair base. I guess that really gets down to the point on that part.

We do not maintain and support idle industrial capacity for other critical hardware, aircraft, missiles, or electronics. And we do not budget to support excess industrial capacity beyond that required to support efficient peacetime production. I think that is true in all categories of the product lines that we deal with.

We believe our policies of competitive procurement support the multiple purposes of building force structure, controlling cost, and maintaining a mobilization base in the best fashion possible within the resources that are made available to us.

That ends the summary of my remarks, sir.

I am prepared for any questions you might have.

[The statement follows:]

STATEMENT OF EVERETT PYATT

I am pleased to appear before this committee, along with Admiral Hekman and Admiral Nyquist, to discuss our progress in constructing and sustaining the Navy's force levels. The Admirals beside me are more qualified than I to comprehensively address United States Naval force planning, the status of Naval shipbuilding program plans and how we intend to utilize our force. I want to focus today on the importance of the Navy ship acquisition program and what we have done to insure that the best value is received for each defense dollar.

The Navy and this committee share the public concern regarding effective management of every federal expenditure. We also share a national commitment to sustain a credible military posture to deter actions threatening our security. These considerations are reflected in the amended FY 90/91 Navy Shipbuilding Budget Request. Because last year included 2 carriers this request is 20% lower than the FY 88/89 shipbuilding appropriation, yet it ensures continuation of the minimum naval force levels necessary to meet our military requirements. However, as I have reported to this committee in past years, attainment of our goal of a 600-ship Navy requires an average of about $12B per year in FY 89 dollars. This is consistent with prior estimates.

The readiness of our ships today has improved by over 100% since the start of this decade, while Navy air squadron readiness has improved by a factor of three. Our record is impressive and could not have been achieved without the support of this committee, the Congress and the American people. Proposals have been made to reduce the readiness of the Navy as a way of reducing the DoD budget. That would be a return to the bankrupt policies of the 1970's, a situation all of us tried to correct over the last several years. We should not repeat that mistake. Likewise, we continue to hear demands that the number of Navy carrier battle groups can be reduced at no cost to readiness, optempo or personnel. I would like to focus on that issue a moment.

The Navy's deployable carrier force was pared from 15 attack aircraft carriers and 9 ASW carriers in 1968 to 12 multipurpose carriers by 1980. As a result, one aircraft carrier was forced to serve an 8 month uninterrupted Indian Ocean mission in the midst of the Iran crisis. As has been described many times before to this committee, this force level was below what the Navy believes is the minimum force level necessary to support our worldwide commitments.

In the most recent history, aircraft carriers have served this country as an instrument of national will; in several cases in direct response to international terrorism. The Achille Lauro hijacking, the Libyan bombing of 1986 and support of our recent successes in the Persian Gulf are representative examples. The mobility and effectiveness of the carrier battle group continues to successfully stabilize one crisis after another. They have been the backbone of this nation's ability to keep the peace. However, the emergence of ever more lethal weapons and technology in the hands of expanding numbers of autocratic nations predicates the need for increased reliance on these mobile carrier forces. The potential conventional challenge is not declining. It is growing more dispersed. Seventy percent of our crises around the world requiring a military response since WWII have included the carriers.

Because of the recent Soviet "peace initiatives" many argue that U.S. defense expenditures should be cut. While we can remain optimistic about the threat of global war and of Soviet intentions, we must await the actions to match the words. Ship force levels can be reduced quickly, but it takes a long time to reconstitute forces. Modern ships are years in construction and require billions of dollars of investment. The aircraft carrier battle group continues to provide us with a versatile, flexible and mobile force and is the most difficult of all to reconstitute.

In the global context we recognize that ninety-nine percent of United States overseas trade travels on the surface of the world's oceans. This fact will not change. Our Naval commitments are critical. The sea lanes, world wide, must never be subject to political intimidation and this can only be guaranteed by maintaining a flexible offensive strike force. Only a sea based force, including airborne capabilities provided by carriers, is able to ensure the safety of the depths below and the airspace above those critical sea lanes of commerce both during peace and during conflict.

Recognizing the necessity to support our global and varied commitments during the 1990s, Congress wisely funded the modernization of the Navy during the past decade including four aircraft carriers. The Navy's carriers must be there when the nation needs them. It is only the carrier battle group that can bring power to bear worldwide without the need for land based support. We didn't pick the fight in Lebanon or Lybia or the Persian Gulf. We don't know when or where the next Achille Lauro will occur. But history proves it will occur. It now appears that due to fiscal constraints this minimum force level cannot be maintained.

SHIPBUILDING PROGRAMS

Last year I reported on several programs. I would like to update that report.

Landing Craft Air Cushion (LCAC)

With the help of Congress, we achieved full rate production with the FY 1989 procurement. All 15 craft from FY 1989 are under contract with our two craft builders. We seek continuation of high rate production of LCAC which is bringing over-the-horizon assault capability to our amphibious forces.

Mine Warfare Ships

After years of difficulty, our mine warfare shipbuilding programs are at last on track. We have awarded the MCM program buy-out contract and seek funding for the final three ships with FY 1990 budget. In the MHC 51 program, we have achieved significant milestones. The lead ship contract has been definitized and one follow ship has been awarded to the lead shipbuilder. We will establish a second shipbuilder in this program with competitive award of one of the FY 1989 ships. We now seek funding for one MHC follow ship in FY 1990 due to fiscal constraints which delay us from properly ramping up to full rate production. The MHC 51 program is achieving our twin thrusts of technological transition to modern glass reinforced hull technology and of low-cost effective mine warfare ship force building.

Attack Submarines

We achieved a significant milestone in the future submarine force by awarding the lead ship construction contract for the SSN 21 class. We now seek funding in FY 1990 for the final SSN 688 class submarine as we transition to SSN 21 class follow ship production in FY 1991.

Fleet Oilers (TAO)

With the help of Congress, we were funded in FY 1989 to buy out the program at a cost efficient production profile. We have worked closely with Congress in our acquisition strategy for completing this program. All FY 1989 ships have been awarded. I would note that our studies of shipyard requirements undertaken to define the TAO acquisition strategy clearly show that Navy programs alone will not sustain the U.S. shipyard industrial base at its current level.

Destroyers

Last year, again with the help of Congress, we were able to achieve full rate production and awarded follow ship production contracts for five ships split between the two destroyer shipbuilders. We seek continuation of full rate production for five ships in FY 1990. Full rate production will continue the favorable follow ship cost trend I reported on last year. As I also reported last year, we plan to build AEGIS destroyers for many years. No other destroyer in production anywhere in the world can match the capabilities of our AEGIS destroyer; and as the future unfolds, others will also see that the DDG 51 class represents the minimum price of entry into modern high threat surface warfare.

Second source production of the AEGIS combat system was initiated last year. We are very sure that the cost savings projected in our second source study will be exceeded. Competition has proved its value again.

Ocean Surveillance

We have a new shipbuilding program this year of particular importance to our anti-submarine warfare initiatives. We are requesting the lead ship of the TAGOS 23 class. With the foresight and help of Congress, we started the first Small Waterplane Area Twin Hull (SWATH) ship program in the United States--the TAGOS 19 class now under contract. We are undertaking a low risk extension of SWATH technology to increase the mission payload of our ocean surveillance ships and plan to begin the TAGOS 23 class program in FY 1990. Design issues have been resolved and the lead ship contract design was completed this month. The TAGOS program has achieved remarkable operational performance and the SWATH ships will extend our operating areas into the rougher, more northerly seas. This is one of our highest leverage, low cost naval shipbuilding programs.

Coastal Patrol Boats

With the help of Congress, we were funded in FY 1989 to initiate, on an urgent basis, the coastal patrol boat program. We have aggressively pursued this initiative as part of our patrol boat strategy as we reported to Congress in March 1989. We are soliciting non-developmental boat designs from industry. We issued a request for proposals in April 1989, and proposals from industry are due next month. We plan to award a production contract before the end of Fiscal Year 1989. Given the urgency, non-developmental design, and military performance requirements of these high speed patrol boats we have sought concepts and proposals from the broadest possible spectrum of the United States boat building industry. Our program is being conducted on a full and open competitive basis. We expect to have a number of interesting concepts to select from that will add to our maritime strength in this area, and also perhaps provide a market for our industry in foreign military sales.

COMPETITION

The American taxpayer continues to be well served by the aggressive competitive procurement policies that the Navy has taken a leadership role with Congress in developing and implementing. The 1970's were characterized by requests to the Congress by the Navy to fund shipbuilding cost growth on prior year programs that in some cases exceeded 30% of the original appropriation. This was an era of awarding ships without adequate design and of low producibility while under severe inflationary pressure. The administration's economic and acquisition policies the Navy instituted early in this decade brought an end to this practice and stabilized costs within budget. Improvements in the post 1981 programs produced underruns in shipbuilding programs as much as 15% below appropriated levels.

The percentage of Navy procurement dollars competed annually (over $50B) has more than doubled since FY 82, rising from 27% to 56% in FY 88. This was achieved by competing 92% of Navy contract actions in FY 88 contrasted with only 30% in FY 82. Competition has been institutionalized in the Navy.

The savings generated by our competitive initiatives have even exceeded our expectations while completely discrediting the nay-sayer's flawed analyses predicting higher net costs. The cumulative awarded Navy shipbuilding program since FY 83 is now being executed for $9.3B less than the President's Budgets. In fact, the most recent Navy analysis shows that second sourcing for the fully awarded CG-47 program resulted in $1.7B of savings. The introduction of a second source for the Navy Standard Missile is generating savings of $660M through FY 94. Second source savings for the five ship LSD-41 buy was $380M while the Tomahawk missile sill accrue savings of $630M through FY 94 due to the injection of competition. Our MK-41 Vertical Launch System is enjoying similar savings of $310M. Furthermore, our analysis shows that the payback of investment necessary to initiate a dual source normally occurs within two years of the introduction of production competition. This makes sole source programs with limited years of remaining production viable candidates for competition.

The evidence is overwhelming that the competitive marketplace serves as our best pricing mechanism. The competitive foundation laid during this decade is providing a better equipped and stronger Navy at a reduced cost for the taxpayer. The Navy Competition Advocate General report documents the results of these efforts.

FY 1989 Programs

We have continued our policy of timely contract award as we sustain the naval shipbuilding industrial base. We have awarded contracts for all the ships funded by Congress in FY 1989 with the exception of the second source follow ship in the MHC 51 program. We expect to complete our competitive selection for the MHC second source this summer. We are organized and staffed for efficient programmatic action and we stand ready for timely execution of the FY 1990 shipbuilding program.

Overruns

Last year I reported to Congress on the overall status of our shipbuilding contracts and our aggressive use of cost incentive share lines. These share lines continue to be an effective management tool in controlling costs. Issues have been resolved regarding cost increases on the share line. These costs are within funds available to the Navy. Although several of our programs have risen above target prices I am happy to report that the situation has not deteriorated since last year. Estimates of the Navy's ultimate share of any additional costs continue to range between contractor estimates of $600 million and and Navy estimates of $1.3 billion as I reported last March. Again I repeat, I do not currently foresee the need for additional money to pay these bills.

SHIPYARD INDUSTRIAL BASE

The size of the Navy fleet has increased almost 20% since 1980 from 479 ships then to more than 568 battle force ships today. This growth was accomplished by implementation of the Navy's Maritime Recovery Program at a time critical for the U.S. shipbuilding industry. Both domestic and worldwide demand for commercial new ship and offshore oil rig construction collapsed due to over capacity and declining orders. Increased requirements for domestic construction and conversion of U.S. Naval vessels provided an interim safe haven for our most efficient shipyards in an otherwise internationally non-competitive industry.

More Americans are employed today building only Navy ships than were employed building both Navy and commercial ships as recently as 1972. Over 96% of today's shipbuilding production workforce is performing Navy work in contrast to only 57% in 1972 and 76% in 1980. In addition, Navy ship repair now accounts for 62% of the repair work in the active base in contrast to 45% in 1972 and 51% in 1980. The Navy shipbuilding program is a vital element in maintaining the shipbuilding industrial base and has served as a safety net to the industry as commercial markets collapsed.

This influx of military work was not limited to complex tasks performed in heavily capitalized combatant shipbuilding yards, but rather supported a broad range of maritime industry components including the smaller shipyards. Expenditures of $6.9B were made for procurement of sealift ships, specialized support ships and equipment and the conversion of many commercial ships to military configurations including 13 Maritime Prepositioning Ships.

The Navy shares concerns about the continuing erosion of the U.S. shipbuilding base and the potential for adverse impact on our mobilization base. Recent Navy fleet expansion has served to limit this contraction. Savings of $9.3B have been used to provide funds to procure and activate additional Navy ships thus increasing the work for U.S. shipyards. Previous policies would have accelerated the industry decline. The shipbuilding base today would be notably smaller and less efficient if our ships were procured on a sole source basis or thinly allocated over a larger number of yards thereby foregoing the efficiencies of series construction. Without the Navy competition policy, we would need only one carrier/destroyer yard, one submarine yard and a much more limited range of other yards.

SEALIFT

Much has been said recently about the decline in the size and military suitability of the U.S. Merchant Marine. Sealift is a Navy function, as well as an interagency and NATO alliance problem. The Navy has procured 51 ships for the Ready Reserve Force (RRF) in recognition of the alliance-wide decline of these sealift assets. We have raised the issue of the declining merchant fleet to the National Security Council via the Secretary of Defense. However, the Navy and the Department of Defense cannot solve this problem alone. The industry itself recently admitted at a House Appropriations Committee hearing that even full implementation of the ship construction program proposed by the President's Commission on Defense and Merchant Marine would provide an inadequate volume of shipbuilding to transform the U.S. industry to the efficiency levels achieved in foreign shipyards.

Some have falsely attempted to use the decline in sealift assets as a basis for peacetime support of excess shipyard industrial capacity. Sealift ships cannot, however, be built after the start of a war and be of use in the early most demanding stages of the war. Navy mobilization requirements consist of completion of ship construction ongoing at mobilization, activation of the Ready Reserve Fleet and certain inactive Navy ships, sealift enhancements to selected merchant ships and battle damage repair. Additional ship construction is the lowest priority during wartime mobilization.

PUBLIC/PRIVATE COMPETITION

Congressional efforts have also helped to control costs while aiding the industrial base. In 1985 Congress directed the Navy to initiate a test of public/private competition of Navy overhauls to determine the feasibility and benefits to be derived from such a change in policy. The FY 86 Appropriations Act further required the Navy to compete between the public and private sectors a minimum of four ship overhauls in FY 86. The Navy has continued and expanded these competitions with the support of the Congress.

The Navy has conducted and awarded 47 overhauls and availabilities through FY 88 as part of the public/private competition program. Private shipyards were awarded 27 of these availabilities and 20 were awarded to public shipyards. They included 20 overhauls, 20 selected availabilities (D/SRA) and 7 other phased maintenance/repair availabilities. These awards represented 8.4% of the entire maintenance and modernization budget for FY 86 - FY 88.

The FY 89 public/private program includes 21 availabilities representing 9.1% of the maintenance and modernization budget. To date, 4 awards have been made to public shipyards and 11 to the private shipyards.

Nominations for the FY 90/91 public/private program are not complete but are expected to include in excess of 24 availabilities in each year representing an average of 12% of the entire maintenance and modernization budget.

The public/private competitions over the past four years have been of benefit to both Navy and private shipyards. The initiation of public/private competition resulted in a dramatic step reduction in both the cost and schedule for our ballistic submarine (SSBN) overhauls. Furthermore, the infusion of competition motivated our public yards to critically examine their own productivity and competitiveness in conjunction with the Navy Industrial Improvement Program (NIIP) that was being implemented with the FY 87 program. The NIIP had identified actions the public shipyards needed to make in order to improve efficiency. These implemented efficiencies now allow us to make every repair and maintenance dollar go further while maintaining Navy readiness in an ever more constrained budget environment.

The private shipyards have gained as well not only from the increased competitive discipline required on their part but also by the opportunity to bid on a larger number and broader range of availabilities. We expect about 50% of the Navy's FY 91 maintenance and modernization workload will be available to the private sector.

Summary

Our challenge for the future is to continue our cost effective force sustaining ship product lines within fiscal constraints. As I reported last year, our best prospect for achieving this is to continue to base our force building plan in shipbuilding on two fundamental principles. These are: (1) maintain a long term, stable economic production plan for each ship type required by the operating forces, and (2) use head to head competition to foster cost reduction, control inflation, and improve quality. These principles have been applied resulting in our successful Navy force building program while underrunning the President's shipbuilding budgets by $9.3B.

Navy programs remain the single most important element in maintaining the shipbuilding and repair industrial base. Subject to the approval of Congress the Navy will continue to build, maintain and repair its ships. Our analysis shows that this work coupled with limited ship repair work will continue to support an adequate shipyard base for mobilization purposes. In order to achieve these goals the Navy must spend its funds in the most efficient manner. The Navy does not support and maintain idle industrial capacity for other critical hardware; aircraft, missiles and electronics. The Navy as currently and historically budgeted cannot afford to support excess industrial capacity beyond that required to support peacetime production. We believe our policies of competitive procurement support the multiple purposes of building force structure, controlling costs and maintaining a mobilization base in the best fashion possible.

INDUSTRIAL BASE

Senator INOUYE. I thank you, Mr. Secretary.

In the past 7 years, 43 shipyards have gone out of business, and 33,000 workers have left the industry.

In your report to us last year, you indicated that the three companies that were in trouble at that time could go out of business and it would not affect you in any negative way.

Aren't you really concerned about the shrinking industrial base and the mobilization requirements?

Mr. PYATT. Well, being concerned and doing something about it, I think, are two different things.

Of course we are concerned. But we only have so many ships to buy and so many resources to spend, and we have an obligation to do it in as much of a cost efficient manner as possible.

I would turn around and say that our basic business strategy of dividing work, of not awarding all the ships to one yard, has maintained the base.

We have two submarine yards. We could get along with one. We have two destroyer yards. One yard could build all of them.

We tried to split up the TAO's, as I mentioned, within the money we had, but it didn't work.

I think that the basic strategies that we've followed have broadened the base and maintained the base. The question is really how much can you do? How much can you split it up within the money available?

I keep getting into trouble with the economic theorists back in the Pentagon, who say that rather than saving money, as I contend—and I think we have a book of data that shows our experience in many product lines, that shows the costs of starting the second source are repaid within a couple of years, so that we are net beneficiaries. But it does not work the same way for the third source.

So, of course, we hate to see industrial capacity decline in any field. But, again, we only have so many tools to work with. I think we have done a credible job in keeping as many alive as we have.

Senator INOUYE. As you have indicated, under your policy of two for submarines, two for destroyers, et cetera, what if you increased it to three?

Mr. PYATT. That was a debate we had 2 years ago, I guess, with Senator Johnston. We looked at the Navy costs associated with, in this case it was a combatant ship and there were quite a bit of costs associated with the combat system, and we started looking at it. It looked like for the numbers of ships that we were buying, we could not load anybody efficiently, and so it started to turn around the other way. After some debate here, too, that was the conclusion, and you supported the conclusion.

Different classes of ships have different answers, too. I thought, for example, in the TAO one, which is a simpler class of ship, I thought that, when we went out for solicitation this time, when we had the larger buy, splitting it up would result in splitting the purchase. But it didn't happen.

Senator INOUYE. When you have two yards building a certain type of craft, under what circumstances would you replace one of them?

Mr. PYATT. Replace?

Senator INOUYE. Let's say you have two yards working on destroyers. What must happen before you say shipyard A, we're not going to do business with you; we have a new one coming in?

Mr. PYATT. They would have to really fail in their work, fail to make progress and run the prices up. It is an event that we are lucky we have not had to face in combatants.

Senator INOUYE. Meantime, we would have to suffer?

Mr. PYATT. Yes, sir.

TAO

I'll tell you, we've been through a few sufferings, and there is one right now in the TAO. The suffering between this gentleman—indicating—and myself has been painful.

Senator INOUYE. You are convinced that under the system that you have adopted, we could go through any anticipated crisis?

Mr. PYATT. Well, any anticipated crisis is a tough test. If you go back to World War II, there was a major mobilization of the country that went on for several years before the war. I would assume that something of that nature would mean there would be another mobilization.

What I think your question deals with is also the rest of the Defense Department. There is more to it than just ships. Having something to put on ships is a big problem. All those things have a long lead time.

I'm sorry, it's a tough question to answer because there are so many pieces to it. It is not just ships. It is not just shipping. There are tanks and all the Army equipment has a long lead-time. It's not quite as long as building ships, but it is long.

With the combat attrition rates that people have seen in the Middle East and recently, you could have a lot of demand for land vehicles, for example.

Senator INOUYE. Your statement alluded to a problem that you may be having with Bath on the construction of the first AEGIS.

DDG-51

Mr. **Pyatt**. Yes, sir; the first DDG.

Senator **Inouye**. How far back in schedule is that?

Mr. **Pyatt**. It's about 1½ years late, I believe. Just about 1½ years.

I would like to say on that that a chunk of that problem belongs to the Navy. We built into the specifications some pretty demanding requirements that are classified. I don't think we or the shipbuilder fully understood the impact of those things, but we made them for good military reasons. We have since then sorted out, between us and the company, the various responsibilities.

Senator **Inouye**. Do you have any idea how much the overage will be?

Mr. **Pyatt**. It's within the budget. I will have to furnish the number for the record on that particular ship. We'll furnish that for the record.

[The information follows:]

The Navy estimate for the DDG-51 contract is over target. The Navy exposure of $94.4 million is within contract ceiling. This increase is being funded within the current program budget.

PUBLIC/PRIVATE COMPETITION

Senator **Inouye**. Is there any cost advantage to building five per year, instead of three per year, on these ships?

Mr. **Pyatt**. At three a year, this is low enough that we would likely lose a yard; or else having two yards run at a fairly inefficient pace. It depends on what other work those yards picked up.

Three a year could be a disaster. But, again, it depends on some other things.

We have had the cruiser program running at five a year for I don't know how many years now. It is an efficient pace for all concerned. I think we have been able to turn money back on those programs for several years.

Senator **Inouye**. As you know, this subcommittee has supported your program to have competition in public and private yards in overhaul.

Mr. **Pyatt**. Yes, sir.

Senator **Inouye**. How is this program going along?

Mr. **Pyatt**. I think it is going very, very well. I think we have achieved some things.

When we first talked about it in hearings some years ago, I don't think either one of us was quite sure about what would happen. But I think it has been good on both sectors. I was hoping there would be some more competitive area in nuclear submarine work. But it has not turned out to be that way.

But in surface ships, it has been good for both sectors. We've been able to give the Navy a bit of a challenge in management and the private sector a bit of an opportunity they have not seen before. I don't know what else to say, but that has been my impression.

NUCLEAR SUBMARINE OVERHAUL

Senator INOUYE. What is the rationale for submarine overhaul by public and surface by private?

Mr. PYATT. Well, I think it is kind of historic, and Admiral Hekman may wish to add to this later.

We used to have submarine overhaul in the two building yards. At various times in their history, they have become exclusively building shipyards, and the decision was made to take the overhaul and repair work out and put it in the Navy yards. This kind of stayed that way as Navy construction has stayed up.

A yard working on a nuclear submarine requires a high degree of technical expertise on those things. There are not many places around the country that could do it.

Admiral HEKMAN. In the submarine public/private competition, Mr. Chairman, the bids that came in from the private sector were, far and away, higher than the bids that came in from the Navy yards. So the ships were assigned to the Navy yards, and they were completed within, and in some cases below, those cost estimates.

The reason for this is because the two yards that were qualified for submarines are concentrating on construction, and if they could get an overhaul, they would bid it to where they could do it with available workmen and also make a profit.

In the short availabilities for submarines, they are now coming in again and winning some of those from the public yards.

So this year we are seeing three short availabilities going back into the private sector under public/private competition. They have gotten better there, while we have gotten better with surface.

We went 2 years without winning a surface contract in my Navy yards. We have now just recently won a major, new threat upgrade overhaul in the Long Beach yard. It has driven us to be far more competitive in the way we do our business.

Senator INOUYE. Thank you.

Senator Stevens.

Senator STEVENS. Thank you, Mr. Chairman.

OVER-THE-ICE VEHICLES

What is the situation now with regard to these over-the-ice vehicles that we discussed here last year, Mr. Secretary?

Mr. PYATT. I'm not up to speed, sir.

Do you know?

Admiral NYQUIST. Senator, I will have to provide that for the record.

[The information follows:]

ARCTIC LANDING CRAFT

We have initiated the Arctic Landing Craft, Air Cushion Vehicle (LCAC) Project and are moving toward a proposed demonstration and validation (DEMVAL) of an enhanced, arctic-capable LCAC.

Background: As part of the fiscal year 1988 SCN appropriation, the Congressional Appropriations Conference Committee provided $36.5 million SCN for LCAC advance procurement. The Committee's stated intent was that $2.8 million of this total be used solely for an arctic-configured LCAC. Noting Committee guidance, the Chief of Naval Operations requested that NAVSEA define, initiate and implement a program that would enhance LCAC capability in arctic operations. An Arctic LCAC Project Plan was developed and implemented in June 1988.

Status: Building upon the findings of LCAC cold weather tests conducted in 1987 at the McKinley Climatic Laboratory, efforts have been initiated leading to the development of an arctic-configured LCAC with over-ice capability. Significant among these ongoing efforts are:

The tasking of LCAC Contractors to provide Engineering Change Proposals (ECPs) for specified system and hardware enhancements required for LCAC operating capability to -30 F. These hardware improvements primarily consist of heating, lubrication, and hydraulic system changes for operation in the Arctic environment.

Identification of arctic operations possible with the basic LCAC and identification of technically achievable and cost effective enhancements that significantly expand arctic operations beyond basic capabilities.

Study of environmental and surface geometry features likely to be encountered in specified Arctic regions and assessment of the impact of such environments on LCAC operations.

Operational capability and requirements studies that will predict LCAC over-ice performance at both existing and enhanced cushion heights.

Identification of other required design modifications necessary for LCAC over-ice operations and evaluation of new design deicing systems and equipment.

Analyses of LCAC obstacle detection/avoidance requirements and navigation and communications systems capabilities in the Arctic regions.

Preparation of test plans for the testing of redesigned and reengineered components and development of a functional test plan for LCAC operations in the Arctic region.

Analysis of the Arctic LCAC mission.

Approximately $1.3 million has been obligated for the above efforts. Remaining funds are designated for hardware, system and component tests, and to offset the cost of a proposed operational DEMVAL.

Arctic LCAC Project participants thus far include: Naval Sea Systems Command; Naval Coastal Systems Center; Naval Ocean Research and Development Activity (Polar Oceanography Branch); David Taylor Research Center; Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers; Textron Marine Systems; and Avondale Gulfport Marine.

Research material has been provided by the University of Alaska Arctic Environmental Information and Data Center.

ENVIRONMENTAL CHECKS

Admiral **Hekman**. Senator, we have completed the cold environment checks on all of the equipment. We are making the modifications that we have found are necessary from the cold checks, and we hope to be able to test the full vehicle very shortly.

I will get you the entire schedule as soon as possible. It does look promising, however.

Senator **Stevens**. In this hearing, is it possible to go into the increased utilization of these vehicles by the Soviets up my way?

Admiral **Hekman**. That would have to be in a closed hearing, I believe, Senator. Furthermore, I am not prepared to answer that now.

[Clerk's note.—The report entitled "Soviet Air Cushion Vehicle Participation in Over-Ice Operations" is classified.]

Senator **Stevens**. I would appreciate it if you could update us on that.

It is my understanding that this whole concept of the initiative of the over-ice version of the air-cushioned vehicles really started on the other side, and we have to have some capability to deal with that. Notwithstanding the President's brilliant statement of this morning and everything he is doing over there in NATO, I note that that agreement does not cover anything East of the Urals, which is my backyard. We are sort of interested in what is going on over there and trying to figure out how these agreements in Europe are going to affect the North Pacific.

It just looks like there is going to be a substantial increase in the Soviet presence in the North Pacific and that this is one of the worrisome areas, their increased ability to deal with wintertime rapid deployment of people and materiel.

Admiral **Hekman**. Sir, there does not appear to be any major technological problem with developing that type of craft. But we do have to do some reengineering. I will get that schedule to you. We are working on that at as rapid a pace as we can.

[The information follows:]

Fleet Operations in the Northern Pacific

With the concurrence of Fleet Commanders, the demonstration and validation (DEMVAL) would be conducted as an adjunct to scheduled Fleet operations in the Northern Pacific areas. The tentative goal for the DEMVAL is late fiscal year 1991 or early fiscal year 1992. Preliminary planning includes the conduct of DEMVAL operations in the Gulf of Alaska and Bering Sea regions with primary focus on the Cook Inlet area where a variety of ice conditions exist during winter months. Extension of this initial effort would be the conduct of DEMVAL operations in either the Bethel or Nome areas at a time of the year that will allow LCAC operations in transition from open water to pack ice to fast ice and return.

Schedule: In fiscal year 1989, complete environmental and geographic studies, operational capability studies, and material engineering studies. Submit engineering change proposals.

In fiscal year 1990, complete development of functional test plans, Arctic LCAC mission analysis, and equipment fabrication and checkout. Conduct climatic lab component tests and environmental impact study.

In fiscal year 1991, complete modification of two delivered craft for Arctic operations. Conduct DEMVAL of enhanced Arctic capable LCAC (pending availability of scheduled fleet operations in the NORPAC area).

U.S.S. MIDWAY

Senator **Stevens**. Have you told the committee yet, Mr. Secretary, what the developments were with regard to the *Midway* and the results of the proposals we made last year in our report?

Mr. **Pyatt**. Not in testimony. I think we did it in a letter. But I'm not sure.

Basically, what happened as a result of the initiative taken by this committee, again, was that the Japanese provided funding in other areas that our people considered was new funding and above previous commitments. They concluded that the efforts of this committee and of the law were instrumental with that, and that what they had done had satisfied the law. They then wanted to go ahead and start the *Midway* conversion.

I think that was quite a successful operation.

Then the next piece comes along, and we go through the budget reductions and decide to retire *Midway*. So I think we will probably not do the notch conversion over there because the *Midway* has so few years left after that for operational use.

But I think our people were very, very impressed that the Japanese did do what they did.

U.S.S. IOWA

Senator **Stevens**. Finally—and I don't want to open up old wounds for some of my colleagues or for you—after the problem with the *Iowa*, it is my understanding that there are going to have to be a substantial amount of repairs to that vessel.

Is that right?

Mr. **PYATT**. I don't know what substantial means. But we think it is about $12 million.

Admiral Hekman can talk more about it.

Admiral **HEKMAN**. Sir, I inspected the ship, as a matter of fact yesterday, and went through the summary of the requirements for repair. We estimate between $10 million and $12 million will be required to repair, and about 110 shifts of work. However, the ship withstood that accident in incredible form. There is very little, or no, structural damage, and some internal buckling inside the mount. Almost all of the cost is in the equipment that has to be replaced or repaired.

Senator **STEVENS**. I understand the Navy's policy is to keep the battleships afloat. Is that it?

Mr. **PYATT**. Yes, sir.

Senator **STEVENS**. Even if it means we don't build some new ones?

Mr. **PYATT**. Well, we'll have to get to that. But I think it is currently in the operations, the O&M budget, to support them.

Admiral Nyquist can talk more about it. But that is our current force structure plan.

Senator **STEVENS**. Well, there is no reason, Mr. Chairman, to fight that battle all over again. I still disagree and I think the time is going to come when those old battleships are going to eat your lunch.

We should put them aside now and keep modernizing the Navy. But we'll have to wait for another time for that battle, I guess.

Thank you very much.

Senator **INOUYE**. Thank you.

Senator Cochran.

Senator **COCHRAN**. Mr. Chairman, thank you very much.

I notice in the statement of Mr. Pyatt on page 7 some comments about the coastal patrol boat program.

Mr. **PYATT**. Yes, sir.

PATROL BOATS

Senator **COCHRAN**. During the last week, I had the happy experience of going to Pascagoula, MS, to celebrate with the Defense Minister of Israel the signing of a contract with Ingalls Shipbuilding, to build three and maybe four new Corvette patrol boats for the Israeli Navy.

I wonder whether or not, in connection with the statements you make, you plan to request funding in this year's appropriations bill for a certain number of patrol boats. You mentioned that you plan to award a production contract before the end of fiscal year 1989.

Mr. **PYATT**. No, sir.

The money was made available in 1989. We had a 1-year limit on the money. We are running like mad to get the procurement process through, to get the money obligated within that time period.

They are for the special warfare forces. We understand the interest of the Congress in improving those forces, and we are simply trying to do the best we can do.

Senator COCHRAN. I don't even know whether Ingalls Shipbuilding is one of those who will be submitting a proposal.

You mentioned that you issued a request for proposals in April 1989, and proposals from industry are due next month. But I was just curious about how many patrol boats you anticipate being able to purchase this year.

Mr. PYATT. I think it is 11. These are not comparable to the Israeli Corvettes at all.

Senator COCHRAN. I was curious about what is the difference between this kind of boat and the one Ingalls in building for Israel.

Admiral NYQUIST. Senator, I believe the Corvettes are, as we call them, blue water capable. The patrol boats that we are building, while they can operate in some pretty rough weather, are mainly a coastal patrol kind of vessel.

Senator COCHRAN. They would be much smaller, then, is that correct?

Mr. PYATT. Yes; 110 to 120 feet.

Admiral NYQUIST. A little over 100 feet, compared to the Corvette, which is somewhat bigger.

Senator COCHRAN. Would these new boats be replacing boats that we now have or would this be an additional capability?

Admiral NYQUIST. They are replacing the patrol boat Mark III, which is a 65 foot patrol boat and has served us long and well, including in the Persian Gulf. But they are just getting old and they are getting beat up.

SEALIFT SHIPS

Senator COCHRAN. I also noticed in Mr. Pyatt's statement some comments about expenditures that have been made in the past for sealift ships, specialized support ships and equipment. I believe $6.9 billion has been spent over time for such activities.

I go on down to the next part of the statement which talks about the inadequacy of our maritime capability in time of an emergency. Apparently, the consensus is that we would have an inadequate merchant fleet to respond to the needs of the services.

I remember when we had the Commanders-in-Chief of the regional commands here before the committee. Each agreed, I think, that one of the highest priorities that we have in dealing with emergencies around the world would be sealift capability.

Is there a proposal in your presentation today for a new program or action that should be taken by our Government to deal with this problem? You point it out, but I do not see anywhere a suggestion of what we are going to do about it.

Mr. PYATT. There is no proposed program in here to build new ships for sealift. It is partly a result of the pressures that we felt.

We feel that our first priority is combatants, because without combatants, the hope of survival of any sealift is small. And the projection of military power is built around that.

As I pointed out in the testimony, during the last several years we bought a lot of ships in the used ship market. They are good ships. There are about two divisions worth of lift there, as I recall it. Congress supported us in our build and charter programs for 13 prepositioning ships. We converted seven SL–7 ships into deployment ships. That is about a division's worth of lift. We bought conversion kits to be able to convert container ships into ships that will carry trucks, tanks, and wheeled equipment.

They are stacked around the country. There are 25 ship sets of that around.

That has kind of been our contribution in trying to make a dramatic change in our sealift capability. I think without these endeavors, it would be much, much different than it is now.

People do comment about the shortage. I think shortage is also relevant, depending upon what scenario you use and what projection of U.S. force you are talking about. Different scenarios come up with different answers.

There is an interagency consideration of the whole problem now, and we will have to wait and see how it comes out.

PERSIAN GULF

Senator COCHRAN. Mr. Chairman, my final question is with respect to the projection of power in the Persian Gulf area.

I know that at one time we had a considerable presence there. Has that changed? What do you foresee for the next fiscal year? Will this have any budget consequences? Will we need to allocate some funds, especially for a presence in that part of the world?

Admiral NYQUIST. Senator, we are slowly drawing down our force level, although we are not to where we were before the Iran-Iraq War.

As far as projecting the need for additional funding, we can provide that for the record. There are more ships than we normally have over there, so that costs us more O&M. But we can provide that for the record, sir.

Senator COCHRAN. Thank you very much.

[The information follows:]

OPERATIONS AND MAINTENANCE

Estimates for the fiscal year 1990–91 Operations and Maintenance, Navy (O&M,N) budget are based on Mid-East operating force levels which existed prior to commencement of Persian Gulf convoy operations and do not include any additional funding for an increased level of operations in the Persian Gulf.

AIRCRAFT CARRIER RETIREMENTS

Senator COCHRAN. Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Johnston.

Senator JOHNSTON. I thank you, Mr. Chairman.

Mr. Pyatt, welcome to the committee.

It is my understanding that the USS *George Washington*, when it delivers in 1992, that the *Midway* will be retired at that point.

Is that juxtaposition in time correct?

Mr. PYATT. The *Coral Sea* goes first.

Senator JOHNSTON. The *Coral Sea* goes first?

Mr. PYATT. Right.

I didn't have my carrier schedule here. Then the *Midway* in 1995.

Senator Johnston. The *Midway* is in 1995.

Does the Navy plan to homeport another carrier in Japan when the *Midway* retired?

Mr. Pyatt. Yes.

Current plans and current treaty envision a carrier there. I do not believe the carrier has been publicly identified yet.

Senator Johnston. But there will be one.

Mr. Pyatt. We do have a plan and there have been discussions about it. But I don't believe the carrier has been identified.

Senator Johnston. Now, obviously, the changing dynamics of defense strategy, arms control, and all of that have not played out, and no one can know specifically where we will end up. New proposals are coming out every few weeks.

Is the Navy, your department, being called upon to study new tactics and new strategies?

Mr. Pyatt. Most of this occurs in the JCS area. Admiral Nyquist can respond.

Admiral Nyquist. Senator, we certainly play a role with the chairman and his staff in providing Navy inputs to the strategic reviews.

CARRIER BATTLEGROUPS

Senator Johnston. What are your current long-range plans with respect to carriers?

Admiral Nyquist. For the time being, Senator, we are going to stay with 14 carrier battle groups. So our achievement of 15 will be delayed for the time being.

Senator Johnston. Will both of those be delivered, will the new ones be delivered in 1992?

Mr. Pyatt. I have the data now. We'll try the question again.

The *Washington* comes in 1992; the *Stennis* in 1997; the *United States*, which is the name for a CVN-75, in 1999.

Senator Johnston. Why is there a difference between the *Stennis* and the *United States*? I thought they were going to be done together.

Mr. Pyatt. Well, they are being done in parallel. But one starts earlier and one finished later. They are sequential.

Senator Johnston. Oh, I see. I thought they were together.

Mr. Pyatt. They were appropriated together, and that was what enabled us to reduce the price. Both the contractor and the Navy were able to go out and buy two sets of hardware at one time, so that the manufacturers did not have to do two set-ups, two times.

But appropriating them together enabled us to have the cost savings. But the manufacturing process is such that they are made sequentially.

AIRBORNE ASW

Senator Johnston. With respect to antisubmarine warfare, has the Navy looked hard at the V-22?

Mr. Pyatt. Oh, yes.

We have supported the V-22 for a good number of years, for the Marine mission.

Senator JOHNSTON. I know it is very strong with the Marines, but how about as an ASW?

Mr. PYATT. We had it as an ASW mission, and I am kind of out of touch.

Admiral NYQUIST. We have looked at it, Senator, and we looked at it and decided that we could, for the time being, improve the S-3, which is the current carrier based ASW aircraft. That could provide good service for the next several years. Then the V-22 got into the decision-making process that determined to end the program.

Senator JOHNSTON. I know they have come in with that decision in the program. But I have the feeling that the Marines are being sort of the ones to sustain the whole program and the other services are hoping that they will win so that they will be able to use the plane.

It seems to me that the ASW mission for the V-22 is just made in heaven. I mean, it has the speed, it has the linger time, it has all of those things that, at least to the uneducated mind, seem to make it a perfect craft.

Admiral NYQUIST. Yes, sir.

I would like to provide you a little bit more for the record, Senator.

I know that we looked at it and have studied it. It takes up more space on a carrier than, say, the S-3, so that was a consideration.

We looked at putting it on smaller ships individually, on destroyers, and that took a lot of looking, and we weighed that against having the smaller S-3 on the carrier.

So I know that that has gone on. I just have not been close to the conclusion of that look, and I would be very happy to provide that for the record, sir.

Senator JOHNSTON. You wouldn't be in a position to say whether they would use the V-22 in ASW if it were available?

Admiral NYQUIST. It would certainly be a candidate and it certainly would be looked at. But I will provide that for the record.

Mr. PYATT. We looked at it, and it didn't make it into the program. But it was 2 or 3 years ago, and I did not participate in it. I don't remember that many details about why. But I remember some of the issues that he raised. It is an awkward size for some of the ships that they were looking at. That's about all I recall right now.

Senator JOHNSTON. I wish you would send that to me, Admiral Nyquist.

Admiral NYQUIST. Yes, sir.

[The information follows:]

In 1987-88, the Navy conducted an extensive study regarding the cost and effectiveness of replacing the S-3 with the SV-22 for ASW. The study analyzed alternatives of platforms including various mixes of SV-22's, S-3's, and SH-60's using numerous basing and staging options on aircraft carriers and modified surface combatants. The study concluded that the decision to develop the SV-22 should be postponed. The Navy had envisioned using the P-3 Update IV ASW Mission suite and the Airborne Low Frequency Sonar, ALFS, as the heart of the SV-22 ASW mission system. However, since both the P-3 Update IV and ALFS were under development and had not yet completed operational evaluation, a concurrent effort to incorporate these two systems into the SV-22 (based on an aircraft that had not flown or tested) was considered premature.

SURFACE EFFECT SHIPS

Senator JOHNSTON. Finally, we have LCAC operating now, and I understand the experience has been very good. I understand that also the SES model in general is one of the candidates for a patrol boat.

Can you give me a statement as to how well SES is working out as a technology in general for ocean-going ships.

Mr. PYATT. For ocean-going?

Senator JOHNSTON. Or for anything.

Mr. PYATT. On ocean-going there is nothing.

I think the only candidates, that is, the LCAC's you mentioned are not really an SES, but they are an air cushioned vehicle. They are doing fine with us.

Senator JOHNSTON. I thought that is what an SES was?

Mr. PYATT. An SES has solid sides, and not the rubber skirt.

Did you want to say more on that?

Admiral HEKMAN. That is the engineering difference between an SES and an air cushioned. The LCAC's are air cushioned, and their performance has been very, very satisfactory.

We are into full production in them.

Senator JOHNSTON. The principle of gliding on air is the same.

Admiral HEKMAN. It actually flies; yes, sir. It has skirts all the way around and it flies.

Senator JOHNSTON. What about the SES?

Admiral HEKMAN. The SES's side is solid and still is in contact with the surface. It sort of acts as a half air cushion-half hydrofoil type of hull design.

Senator JOHNSTON. It has the same advantages, then, I guess, as an SES.

Mr. PYATT. Yes; there is just an engineering difference.

Admiral HEKMAN. Many of the advantages are the same. However, the air cushioned, the total air cushioned vehicle is much more maneuverable and has the ability to go right up over land, trunks of trees, and all the rest, like the LCAC's do.

Senator JOHNSTON. A few years ago, when the technology was a little less mature, we had some conversation here in this room about the SES and about how it would handle the high seas better than a regular ship, that it would be a better platform maybe for some kind of weapons launch that required more stability than a bigger ship.

Can you tell me about that, either with the SES or with the LCAC.

T-AGOS

Admiral HEKMAN. Either of those hull designs in a large ship application have some very serious engineering problems because they take enormous power to operate.

What the Navy is going to in the new hull design is what we call the SWATH hull design. We are now converting our T-AGOS ships to that. That type of hull design, although it cannot carry a very heavy load, has exceptionally good sea-keeping capability in very high sea states.

Senator JOHNSTON. That is the T-AGOS?

Admiral HEKMAN. That's like the T-AGOS. Yes, sir.

Senator JOHNSTON. Was that designed that way so that it can come over things?

Admiral HEKMAN. Yes, sir; it has a very, very small area in contact with the surface.

Senator JOHNSTON. Thank you very much.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Sasser.

Senator SASSER. Thank you very much, Mr. Chairman.

Mr. Secretary Pyatt, I want to welcome you and your colleagues here today.

Mr. PYATT. Thank you.

Senator SASSER. I want to commend you, Mr. Secretary, on the work that has gone on over the past few years in bringing these ships in at below appropriated levels.

We saw a period of time in which the cost overruns on Naval combatants were excessive, sometimes shocking. But I think, as a result of the aggressive, competitive procurement policies that we have seen over the past few years, the taxpayers can take, I think, some solace from the fact that countless hundreds of millions of dollars I think have been saved by your efforts and those of your colleagues.

SHIPBUILDING INDUSTRY

You note here in your prepared statement that more Americans are employed today building only Navy ships than were employed building both Navy and commercial ships as recently as 1972.

You indicate to the committee that over 96 percent of today's shipbuilding production workforce is performing Navy work, in contrast to only 57 percent in 1972, and 76 percent in 1980.

Now, this brings me around, Mr. Secretary, to the question of what is to be done about trying to salvage as much of the underlying shipbuilding industrial base as we can salvage in the out-years.

Clearly, the Navy's shipbuilding program will not, in my view, proceed at the same pace in the decade of the 1990's that it has occupied in the decade of the 1980's. But, at least in the short term, I think we need to do everything we can to try to maintain that underlying shipbuilding industrial base.

Do you have any suggestions at this juncture about how that could be done?

Mr. PYATT. I think you first have to begin that thought by looking at the markets that might be available.

It was not very many years ago that the oil rig market was a very vibrant market. I don't hear any predictions of its return. This leaves in the international market tankers, cargo ships of various kinds, and that is about it, from what I can see. I can see that some shipyards are picking up other little jobs, such as building bridges and other kinds of jobs that use their capabilities.

I guess, as I look around the world, in my opinion for some reason American shipyards have either not been allowed or not tried to get into building ships for the world market. Some say they are noncompetitive. But I think if you laid it down side-by-side, I don't understand why.

Some countries I think have now been demonstrated to have subsidized shipbuilding, and so our people have not been given the opportunity to compete.

Senator SASSER. Are the Koreans subsidizing their shipbuilding industry?

Mr. PYATT. It is my understanding—I have heard that statement made. But they also have the advantage of very, very low wages, compared to anything you and I would recognize as a wage.

But the Japanese wages are in line with ours, and it would seem to me that some of the effectiveness that has been built into Navy ships, you know can be applied in the building of commercial ships, and our people should be competitive. But I don't see them being given the opportunity to even make bids.

I have talked to shipbuilders about it.

Senator SASSER. Do you mean U.S. ship owners are automatically going off-shore to buy their vessels?

Mr. PYATT. Yes, sir; foreign liner operators do not seem to come to U.S. yards asking for prices.

I talked to the American shipbuilders about it because I am pursuing some of the same thoughts that you are outlining. They get into some varying arguments on cost. But when I started to think about it and see some of the data that the Shipbuilders Council had collected for the Trade Negotiator, there is some pretty firm evidence that there is not a level playing field. At least there is to me, and I have more of a passing, than a professional, interest and responsibility.

I think that actions should be taken to open up some of these foreign lines to at least let American guys get a chance. They are not going to be able to compete against Korea because of the wages, even if there is no subsidy.

Senator SASSER. If Korean wages stay where they are.

Mr. PYATT. Right.

Senator SASSER. There is some thought that they might be on the verge of changing in the not too distant future.

Mr. PYATT. Well, you see, what has happened in the Japanese market is I have been told their wages are fairly close to ours. So it is a matter of productive efficiency.

Senator SASSER. Right.

Mr. PYATT. An example that I noted was the debate that occurred here on the Senate floor about selling destroyers to the Japanese. The Japanese could have built those destroyers here cheaper.

We are the best shipbuilders in the world for combatants. Anybody who is really looking for his money's worth should come to the United States first.

But they don't seem to get the opportunity in the commercial ships. Then we have the provision in our laws that lets our liner operators buy ships overseas. They tend to buy them in Korea, the ones I know about.

But I think there is an uneven playing field.

Senator SASSER. I think we have developed over the past few years some of the most efficient and effective shipyards in the world, and I think part of that has been a result of the aggressive procurement policies that have been pursued by the U.S. Navy and those of you who have had the responsibility for purchasing our Naval vessels.

I do not want to see this underlying shipbuilding-industrial base waste away and decay on us. We are the leading Naval power in the world, and I would speculate that we will retain that No. 1 label for decades and decades and decades to come. As such, I think we need to maintain a substantial underlying shipbuilding-industrial base, and I am concerned about what is going to happen to it as we start peaking out here on Navy shipbuilding.

Mr. PYATT. Just a second, sir. You said peaking out a couple of times, I think.

I hope we are in a kind of nice, sustaining mode here. We are coming down a little bit from where we have been. But I hope over the next decade that we are in a pretty much sustaining mode of where we are.

FISCAL PRESSURES

Senator SASSER. Well, you may hope that, Mr. Secretary. But I have to put on my other hat as Chairman of the Budget Committee. I will tell you that there is great pressure out there for savings. I think, given the environment that is starting to develop, if reality begins to match the rhetoric that we are hearing from our chief antagonist on the other side of the world, we are going to have very, very serious pressure for reductions in defense spending.

I assume maybe shipbuilding will have to take its fair proportion of those reductions.

Mr. PYATT. Well, I don't know.

I would like to discuss that for a second, if I may.

Senator SASSER. Sure.

Mr. PYATT. When you think about forces stationed overseas, those are the ones being discussed now. When you think about the presence of the world in mobile forces, it kind of gets back to Navy forces, and that is what we are trying to maintain.

So, I hope you do not automatically jump to "take its share," because there are important national interests that get played outside of Europe that the Navy has been there to support.

Senator SASSER. I think there is precedent to support that view. In other words, we have had periods in our history in which we had relatively small standing armies but fairly substantial navies.

Mr. PYATT. Yes, sir.

Senator SASSER. In fact, I think that has been our history over most of this century, as we got into the Second World War. So there is some precedent for your view, and I suspect it will be stoutly pressed by you and others. You are going to run up against some of your colleagues in the Department of the Army or the Air Force. But we will wait and see how those battles are fought out.

Mr. PYATT. Well, I remind them over in Mr. Aspin's hearing room that there are a couple of plaques all the witnesses have to stare at. Those plaques quote a few words from the Constitution. It says "raise armies and maintain a navy."

I sit there and say to that yes, sir.

Senator SASSER. Let me ask you this question.

The Navy is in the process of reprocuring work on two tankers that could not be completed by the Pennsylvania Shipbuilding Company. I hope when you get around to reprocuring the work to be done on finishing those tankers, that you give great importance to what I was alluding to earlier and what I perceive to be the crucial importance of maintaining a strong, domestic shipbuilding industry.

I know you are going to be hit with immediate cost considerations, and they are important. There is absolutely no doubt about that.

But I urge you to keep in mind the long-term consequences of maintaining a shipbuilding capacity here in the country, and I know you will do that because you have alluded to it at great length here in your statement.

I think that is an indication that you do understand the problem there and tried to deal with it in past years.

Mr. PYATT. Thank you, sir.

Senator SASSER. Mr. Chairman, I have no further questions or comments.

Senator INOUYE. I thank you very much.

FOREIGN MILITARY SALES

I am looking at the fourth report of the Commission on Merchant Marine and Defense and its recommendations, a Plan for Action, dated January 20 of this year.

It says that the Secretary of Defense should take appropriate measures to stimulate the construction of military ships in U.S. shipyards for foreign military sale.

What is the Secretary doing about this?

Mr. PYATT. We have one that Senator Cochran just alluded to, the FMS sale to the Israelis. That is an FMS sale supported by U.S. credits and handled in part through the Navy Foreign Sales Organization.

As customers come up, we will try to convince them of the merits of U.S. ships. It is happening in small boats. There are a couple of programs going on now, small boat programs, for the Philippines and other countries. But these are small boats.

One of the issues that we run into continually, and it was an issue in the Japanese destroyer thing that I mentioned earlier, is that every nation wants its own shipbuilding capability. Very few are willing to buy abroad.

Take the case of the Israelis. They do not have a shipbuilding capability. So if they want to buy ships, they have to buy them in Europe or the United States. There are not too many opportunities.

Senator INOUYE. Then why did we assist the Japanese in sharing with them the AEGIS technology?

Mr. PYATT. Sir, that was a decision.

Senator INOUYE. We opposed it in this committee, as you know.

Mr. PYATT. Yes; I know you did. But the decision was made.

We tried over there, sir.

Senator **Inouye**. The *Coral Sea* is going to be retired.

Mr. **Pyatt**. Yes, sir.

Senator **Inouye**. Will that become a candidate for FMS sale?

Mr. **Pyatt**. I don't think so.

There are two current thoughts on the *Coral Sea*. To the best of my knowledge, no decision has been made.

One is to make it a training carrier. The other is to lay the ship up here in the States.

Admiral **Nyquist**. I think that is still going on, Mr. Chairman. The decision on *Coral Sea* is yet to be made. I certainly do not think, however, that it is going to be a candidate for Foreign Military Sales, either in the Ready Reserve or as a training ship.

Mr. **Pyatt**. We have not had any expressions of interest for the ship, either. Though some may come.

Senator **Inouye**. How much would it cost to place the *Coral Sea* in the Ready Reserve?

Mr. **Pyatt**. I don't know. And I don't know of any estimates.

Do you?

Admiral **Hekman**. An estimate would be somewhere between $50 million and $100 million. I will provide that number to you as soon as we can develop it.

Senator **Inouye**. It's $50 million to $100 million? For what period?

Admiral **Hekman**. It's somewhere in that area, depending on what the disposition of the ship is. Since we have not been told that, I have not been able to develop those numbers.

Those numbers come from past experience in laying up large ships.

[The information follows:]

The fiscal year 1990–91 Revised President's Budget includes $26 million in fiscal year 1990 to inactivate and scrap the ship.

An alternative long-term inactivation could cost in excess of $100 million. A detailed cost estimate would have to be developed.

U.S.S. IOWA

Senator **Inouye**. I have a question on the *Iowa*.

When the Challenger tragically exploded, Morton Thiokol, the company that participated in the construction, was scheduled to carry on the investigation. NASA decided, I think wisely, to have an outside group do the investigation.

I think that, as a result, a lot of changes came about.

In the case of the *Iowa*, why is the Navy insisting upon making an in-house investigation and not going on the outside?

My concern is after this investigation the ship is going to go out on the high seas. What if there is another accident? We are asking for unnecessary problems.

Mr. **Pyatt**. I think I would first like to answer that we always investigate our own accidents. It is part of our tradition, and I think part of our experience, to look into that.

Senator **Inouye**. I realize that. But why don't you also call in an outside party.

Mr. **Pyatt**. Admiral Hekman wants to talk to that.

Admiral **Hekman**. We have engaged the assistance of the Federal Bureau of Investigation in this investigation, Mr. Chairman. They are conducting the investigation, along with the Navy.

Senator **Inouye**. Have we made any steps, taken further steps, since the last briefing that we had, a classified briefing?

Admiral **Hekman**. Sir, we have done a series of tests on the ammunition, which indicate that it is very stable. But beyond that, because the investigation is still ongoing, there really is not anything more that I can add to that statement.

DESTROYER PRODUCTION RATE

Senator **Inouye**. Given the current uncertain fiscal climate, why should the Congress support a multiyear procurement strategy of five ships per year, considering this requires a commitment of $3.5 billion per year for destroyers?

What would the impact be on surface combatant shortfall if the production rate of destroyers were cut to four instead of five?

Mr. **Pyatt**. Well, there are two issues here. I will take the first and Admiral Nyquist can have the issue of four.

That particular budget proposal is in the budget. I think it is up to us to demonstrate to this committee that the savings that you identified will occur.

I would also say that we have tried multiyear procurement on several classes of ships before, and each time the history has been that we get the same prices on annual options.

Senator **Inouye**. Thank you.

Admiral.

Admiral **Nyquist**. Mr. Chairman, as I said in my oral statement, we are down to 64 percent of our requirements for antiair warfare capable guided missile destroyers. And, as you have noted, too, we are going to retire early some 32 of our older guided missile destroyers.

So every destroyer that we build is very, very important. So, five is one more than four per year. Over a 5-year period, that gives almost two battle groups worth of DDG–51.

So we feel very strongly that we need five, and, really, our objective is to get to six. So four would be down from that goal. We need to get on with building those, sir.

Senator **Inouye**. We have many other questions that we would like to submit. But the chairman of the full Appropriations Committee has scheduled a markup on the supplemental, and it is going to begin in a few minutes.

So we would like to submit our questions to you for your consideration and response.

Mr. **Pyatt**. Yes, sir; we will be pleased to respond.

SUBMITTED QUESTIONS

Senator **Inouye**. I would like to thank all of you for appearing here this afternoon and for your testimony. I think you have given us much to think about, and your responses have been frank and forthcoming. I appreciate that very much.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

SEALIFT REQUIREMENTS

QUESTION: Admiral Nyquist, several of the witnesses before the subcommittee have expressed concern with our national sealift shortfall. They contend our sealift capabilities would not allow us to resupply our forces overseas in the event of a conflict. What are your views on this shortfall, and what is the Navy doing in the FY 1990 budget to address this issue?

ANSWER: The only current sealift shortfall is in the area of unit equipment lift. We need about twenty more ships capable of carrying tanks, trucks, helicopters, and other types of unit equipment. In a deployment, this shortfall would be experienced in late delivery of some equipment. We do not currently have a shortfall in shipping for resupply of forces deployed.

The shortfall in unit equipment lift is addressed in the FY 1990 budget of the Maritime Administration (MARAD). MARAD intends to continue purchasing used ships for the Ready Reserve Force (RRF) just as the Navy did in FY 1984-1987. Funding for the RRF has since been transferred to MARAD and we support MARAD's plan and budget for RRF acquisition.

SEALIFT

QUESTION: Do you believe it would be useful to dedicate Navy funds to procure additional dedicated sealift ships?

ANSWER: Additional sealift ships are being procured for the Ready Reserve Force (RRF). Funding responsibility for the RRF has been transferred from the Navy to the Department of Transportation.

QUESTION: There are many who contend the U.S. could not meet its wartime commitments because of a lack of sealift. If the Navy is not tasked to spend more for sealift, then how do you suggest the shortfall can be overcome.

ANSWER: A National Sealift Policy is needed to serve as a guide for action to reverse the decline in our maritime industries. The National Sealift Policy is expected to indicate that this decline is a national problem which requires a coordinated response from all responsible government agencies and industry to resolve. The Policy, when adopted, will serve as the framework from which the discussion of specific proposals can proceed.

QUESTION: **The Navy funded the conversion of several fast sealift ships in the early 1980's. Are they used to move military cargo in peacetime?**
ANSWER: **The converted fast sealift ships are used only in approved JCS exercises.**

SUBMARINE ACQUISITION

Question: Admiral Nyquist, your statement includes charts which show that we have met the goal of 100 attack submarines. I understand we have 20 additional SSN-688 Class submarines and the first new SSN-21 under construction. In your amended budget the Navy reduced its request to buy the last two 688 Class subs down to one. Why is it necessary to buy the last 688 submarine?
Answer: The Improved SSN-688s are and will be our most effective multimission ASW/ASUW platform until a sufficient number of SSN-21s become deployable. The purchase of the last LOS ANGELES Class submarine in FY90, while providing the money for long-lead procurement to support SEAWOLF production in FY91 and out-years, provides us with the most effective use of our ASW budgetary resources.

Question: If the subcommittee deleted funds for the final SSN-688 would you fall below the 100 level goal? If so, when and for how long?
Answer: The deletion of the FY90 SSN-688 will further reduce the Navy's capability to reach and maintain its 100 SSN force level goal. This would be an unacceptable reduction in the Navy's number one priority warfare area, ASW. Such a reduction would also come in the face of a pronounced Soviet threat in an area the Soviets have given no indication of reduced emphasis. Our ability to meet this threat in the future requires the continued support of Congress for the I688 and SSN-21 construction programs.

Question: Does your force goal projection include any early retirements of current submarines?
Answer: In submarine force level projections modern attack submarine classes are designed to have a nominal 30-year hull life. In present plans only the USS GLENARD P. LIBSCOMB (SSN-685) will decommission significantly before that point. USS LIPSCOMB is being retired at the end of her present operational cycle as a cost-saving measure.

Question: There have been reports that the first four BSY-1 ("Busy One") combat systems on the Improved SSN-688 submarines will not be able to perform their mission when delivered, that they will have only limited combat system capabilities. Can you address this matter and describe the current situation?
Answer: The results of postdelivery operations and Weapons System Accuracy Trials (WSAT) of the two Improved SSN-688 submarines delivered to date, have demonstrated that AN/BSY-1 system outperforms previous 688s. Percentage of hits with MK-48 torpedoes exceeded the class average and MK-30 targets were tracked at greater range than any previous submarine.

In August 1985, the SUBACS Program was restructured, in part, to include a two-phase development of the AN/BSY-1.

1. A Preliminary Product Baseline (PPB) configuration was planned for and has been delivered to SSNs-751 - 755.

2. A Product Baseline (PB) configuration was planned for introduction on SSN-756 and later submarines of the class. The Product Baseline system has in fact been introduced early starting with SSN-755.

The first phase, PPB configuration, provides the capabilities to support shipyard installation and checkout, sea trials, weapons firing, and ship safety and supporting functions. This includes sphere array, passive broadband, acoustic support, acoustic communication, bottom sounding, acoustic emission, CCS MK-1 C4 with MK-48 torpedo and harpoon weapons capability.

The second phase, the PB configuration, was to be delivered to SSN-756 and to SSNs-751 - 755 during Post Shakedown Availability (PSA). The upgrade from PPB to PB was to include a new software boot, replacement of the acoustic AN/UYK-7s with AN/UYK-43 computers and installation of a color display console for underice operations. As mentioned above, the first PB system has been delivered to SSN-755 and SSN-751 has been upgraded to PB during current PSA.

In summary, SSN-751 and 752 have completed sea tests with outstanding results. SUPSHIPS, Groton, stated, "Most successful combat system designed suite integrated into a ship in the last thirty years" and sea trials of SSN-751 were "Excellent, surpassing all expectations for a 'First time trial' of a complex new system."

MHC

QUESTION (a): In the amended FY 90 budget, the Navy is requesting $120.3 million in FY 90 to procure one MHC-51 ship. Has the Navy remedied the technological problems associated with this ship's modern glass reinforced hull?

ANSWER (a): There have been no glass reinforced plastic (GRP) technology problems experienced to date in the construction of the lead ship.

QUESTION (b): Has the Navy been successful in transferring this technology to a second shipbuilder?

ANSWER (b): Until such time as the second source is selected by competitive award of the MHC-53 contract, the technology transfer will not occur. This award is planned for late summer 1989. The Navy will not transfer the GRP technology to the second source. The technology will be transferred by Intermarine SpA, the Italian company who evolved the technology, to the second source directly via a contract between the two companies.

QUESTION (c): Mr. Secretary, the Congress mandated that the Navy establish a second source for the MHC program. When do you anticipate that this will be accomplished?

ANSWER (c): The solicitation for the MHC-53 was released on 17 April 1989 and proposals are currently due 30 June. Contract award is planned for late summer 1989.

QUESTION (d): Given the price of the MHC-52, the second minehunter ship, in your judgment, are the remaining FY 89 funds sufficient to award another MHC?

ANSWER (d): Based on our estimates, including cost information from MHC-51 and -52, there are adequate funds in the FY 89 appropriation to award and construct the MHC-53.

QUESTION (e): The amended budget request for FY 90 is a $110.0 million reduction from the original FY 90 request of $230 million for three MHC-51 ships. What increase in unit cost is projected as a result of delaying these two ships?

ANSWER (e): Subsequent to the January 1989 budget, the program was repriced to reflect an increase in the basic construction costs associated with higher than originally estimated material costs experienced by the lead yard. After the repricing, the ship unit cost difference for the class of 17 ships due to delaying two FY 90 ships is $0.6 million (FY 90 constant dollars). However, the impact on the unit price in FY 90 itself is a unit cost increase of $15.8 million in FY 90 due to delaying two FY 90 ships.

QUESTION (f): Do you plan to compete the FY 90 ship between two shipyards, or award to the lead yard?

ANSWER (f): The Navy will make this determination after the second source is under contract.

SSN-21 CONSTRUCTION

Question: What is the current status of the SSN-21 construction, is it on schedule, ahead of schedule, or behind schedule?

Answer: SSN-21 construction is on schedule, with lead ship delivery projected for May, 1995.

Question: Are there any current estimated cost overruns associated with the construction of the SSN-21? If so, what are the costs and the implications of any such overruns?

Answer: There are no cost overruns above target cost anticipated in the lead ship construction contract.

Question: The FY 1990 budget request includes $607 million for long lead time nuclear propulsion plant equipment for the SSN-21 Class submarines. What are the costs by hull? If the FY 1992 budget was reduced by one SSN-21, what would be the amount of FY 1990 advance procurement not required?

Answer: The President's amended budget included $558M for nuclear components vice the $607M shown in January. The $607M required a $49 million adjustment which was footnoted on the original submission. The $558M allows for the procurement of two full ship sets of nuclear equipment at 416M and a partial ship set at 142M. The remainder of the third ship set is included in the FY 1991 budget request. On a per hull basis, the nuclear costs in FY 1990 are $208M. Therefore, if the shipbuilding program drops to two ships in FY 1992, nuclear advance procurement requirements in FY 1990 would drop by $142M.

Question: In FY 1987, the Congress cut the request for advance procurement for the SSN-21 by $79.3 million. What was the schedule and cost effects by this reduction?

Answer: This cut forced the Navy to fund only segments of some long lead components and increased the complexity of the procurement process. The schedule and cost effects were somewhat mitigated since the reduction was restored in FY88.

Question: Please explain the change in advance procurement requirements for the SSN-21 program, comparing the lead submarine to the two requested in FY 1991 and those requested in FY 1992.

Answer: Advance procurement requirements for the lead SSN-21 included the lead ship detailed design effort and nonrecurring changes associated with building long lead components for the first time. As a result, the advance procurement requirements for the FY91 and FY92 are less on a per ship basis.

NOAA SHIPS

QUESTION (a): Why doesn't the Navy lease or otherwise attain the NOAA vessels instead of constructing new ships?

ANSWER (a): The oceanographic ships included in the President's budget will replace small, single-purpose, technically obsolete Navy ships constructed in the 1950s and 1960s. The NOAA ships that are being considered for deactivation are also a varied lot of 1960-vintage platforms that for the Navy's multi-purpose oceanographic missions are either too small, too limited or too manpower intensive.

QUESTION (b): Have you examined this alternative? If so, explain why this is not a cost effective alternative? If not, please review this matter and inform the Committee of your assessment.

ANSWER (b): The alternative of using NOAA ships was evaluated at the outset of developing the Navy's oceanographic ship replacement/modernization plan. For example, NOAA's Class I ships, such as the OCEANOGRAPHER, approximate our TAGS (Ocean) ship requirements in terms of ship size, range, and number of scientific accommodations. But, the OCEANOGRAPHER has only 2,800 square feet of laboratory space and a ship's complement of 107 officers, crew and scientists. We had, in fact, looked closely at the cost and feasibility of converting the OCEANOGRAPHER to a multi-purpose oceanographic TAGS (Ocean) ship and concluded that new construction was far more cost effective. For example, the two FY 90 TAGS (Ocean) ships and the one FY 91 TAGS (Ocean) ship provide 4,000 square feet of laboratory space, plus deck storage space for portable laboratory vans, and a ship's complement (officers, crew, scientists) that is 52 people less than the OCEANOGRAPHER. The third FY 90 ship, the TAGS (MIZAR Replacement), is a large 470-foot ship that will replace the USNS MIZAR and will be dedicated to supporting the Integrated Undersea Surveillance System (IUSS). Conversion of NOAA ships was considered as an alternative to new construction, but the mission requirements for the TAGS (MIZAR Replacement) called for a much larger ship than any of the NOAA vessels.

QUESTION (c): What, if any, aspects of the NOAA vessels make them unsuitable for Navy use in lieu of constructing new ships?

ANSWER (c): The 23 NOAA vessels vary in size from less than 100 feet to just over 300 feet; only those vessels in the 200-foot to 300-foot range would be capable of meeting the Navy's global mission for TAGS (Ocean) and none would be suitable for the TAGS (MIZAR Replacement) requirements. Of the eight NOAA ships that exceed 200 feet in length, seven of these ships were constructed during the same period as the three Navy ships to be replaced. The eighth ship was commissioned in 1974, and conducts fishery and living marine research off the Pacific Coast and in Alaskan waters. The candidate NOAA vessels that might possibly be substituted for the Navy TAGS (Ocean) ships have deficiencies that are similar or greater than the ships they would replace. The NOAA vessels are, in fact, 1960-vintage ships that are either too small, too mission limited or too manpower intensive.

LANDING CRAFT, AIR CUSHIONED (LCACs)

QUESTION (a): Secretary Pyatt, your statement mentioned with apparent support that last year the Congress funded a full rate production of 15 LCACs. Why have you only requested funds for nine in FY 90?

ANSWER (a): We have requested nine craft in FY 90 because of fiscal constraints. Although nine craft per year is not an efficient rate of production, and it does not give economic rate advantages, it is the minimum number of craft that will sustain two builders and ensure production facility survivability. However, nine craft per year, while sustaining the facilities and maintaining a minimum nucleus work force and critical skill mix, will not allow efficiencies in production or increase competition. To gain economic rate advantages, the Navy must have higher production rates. Both yards are producing fewer craft than their maximum efficiencies allow. By procuring 15 craft per year, vice 9 per year, it is estimated that the Navy can save approximately 8 to 10 percent of the total remaining end cost.

QUESTION (b): How do you plan to execute the FY 90 budget (one or two sources)?

ANSWER (b): The budget is based on estimates for two sources. The Navy has priced options from each builder for up to 12 craft, and before any award is made both a technical and a price evaluation must be made prior to determining how the FY 90 program will be executed.

QUESTION (c): Secretary Pyatt, do you believe the Navy's decision to fund only nine LCACs in the 1990 budget is prudent given fiscal constraints?

ANSWER (c): Even though it is more efficient and cheaper to buy more craft, given the current fiscal constraints, nine craft per year is the minimum number the Navy can prudently buy.

QUESTION (d): Admiral Nyquist, I understand the LCAC is designed to carry one M-1 tank and that this was tested last year. What were the results of the test?

ANSWER (d): The M1A1 tank was successfully tested on the JEFF(B), a prototype to the LCAC, in July 1984. In July 1988, an M1A1 tank was successfully transported aboard the LCAC from Aberdeen Proving Grounds to NAB Little Creek, a distance of over 150 nautical miles. The LCAC was refueled at Annapolis. The LCAC, in August 1988, then transported the M1A1 from Little Creek, VA, back to Aberdeen with the same fueling stop.

QUESTION (e): The new M1A2 tank will weigh about 70 tons. Will the LCAC still be able to carry the new M-1?

ANSWER (e): Yes, if the new M1A2 tank weighs 70 tons the LCAC will be able to carry it. The LCAC was designed to carry a 75-ton load in an overload condition. In the overload condition, speed and range are reduced.

QUESTION (f): How does the weight of the M-1 tank affect the speed and maneuverability of the LCAC?

ANSWER (f): The LCAC design load is 60 tons. Although it is capable of carrying up to 75 tons in an overload condition, speed, range and transit times must be adjusted. The Safe Engineering and Operations (SEAOPS) Manual for the LCAC provides the appropriate information that allows the craft master to calculate his speed required for an overload mission based upon range, sea state, and temperature conditions.

During the transit from Aberdeen to NAB Little Creek and return, the LCAC did not experience any maneuverability problems. During tests and fleet experiences noted above, maneuverability is not a problem provided the LCAC is operated in accordance with the SEAOPS Manual for the Landing Craft, Air Cushion (LCAC).

QUESTION (g): What problems were uncovered through the testing done last year, and what steps have been taken to resolve and minimize them?

ANSWER (g): The only problem that has surfaced to date between the M1A1 tank and the LCAC is the excessive number of tie down lashings that may be required to secure the M1A1 to the LCAC during the transit phase of a deployment aboard ship. The tank must be able to be restrained up to a sea state seven condition.

NAVSEA is currently conducting a study to determine the correct number of tie downs that will be required to secure the M1A1 if it is preloaded onboard the LCAC during the transit phase of a deployment while aboard ship.

AEGIS

QUESTION (a): Secretary Pyatt, there are several reports that the construction of the first AEGIS destroyer (DDG-51) is way behind schedule. Is this accurate and are you currently contemplating a change in the fixed-price contract to help out the contractor?

ANSWER (a): The original schedule was adjusted about 18 months ago to accommodate design difficulties. The USS ARLEIGH BURKE (DDG-51) is currently on schedule to meet the revised delivery date of February 1991. We are not contemplating contractual changes to "... help out the contractor." Changes to shipbuilding contracts occur as a regular part of any ship design and construction contract.

QUESTION (b): Do you anticipate the contractor building the first DDG-51 will submit a request for equitable adjustment (REA) (a claim for increasing costs)?

ANSWER (b): No, we do not anticipate that an REA will be submitted.

QUESTION (c): What are the likely costs from any such claim?

ANSWER (c): Not applicable.

QUESTION (d): I am told the Navy plans to use a multiyear procurement (MYP) strategy on the DDG-51. How does this match up with your current two-shipyard competition strategy?

ANSWER (d): The President's budget contains a multiyear request for 10 DDG-51 ships, 5 in FY 90 and 5 in FY 91. If approved, we will compete these 10 ships between the two existing shipyards. A second competition would be held in FY 92 for 14 ships (5 in FY 92, 5 in FY 93, and 4 in FY 94).

QUESTION (e): What do you estimate the savings will be on a DDG multiyear procurement? How close is this to the mandated 12-percent savings over annual contracts?

ANSWER (e): We are estimating a savings of $620 million on the FY 90 and FY 92 ship procurement. There is no statutory requirement regarding a specific percentage of savings required to initiate multiyear procurement for DDG-51. The President's budget request calculates savings by the Navy to be approximately 9 percent.

MCM-1

QUESTION (a): Secretary Pyatt, in FY 90 the Navy is requesting $341.5 million for procurement of the final 3 MCM-1 ships for a total of 14 ships. Are you confident the shipbuilders that produce these ships have resolved the technical and cost problems that have plagued this program in the past?

ANSWER (a): Three more MCMs will deliver this year, the MCM-2, Marinette Marine's first ship, and MCMs 3 and 5, the second and third ships from Peterson Builders and the first ships with the Isotta Fraschini engines. The delivery of these three ships is evidence of the resolution of the technical problems in the program. Settlement of outstanding contractual issues with Marinette Marine was reached in February of this year. All contracts are now firm fixed-price. There will continue to be some contractual issues to be resolved as there are in any program, but they should not have a major cost impact.

QUESTION (b): Will the Navy be competing the award of the last three MCMs or is there only one remaining viable source?

ANSWER (b): The last three MCMs, the FY 90 ships, were competed as part of the award made this last February. Both Marinette Marine and Peterson Builders competed for the ships; Peterson won the competition.

MINE COUNTERMEASURES (MCM-1 CLASS) SHIPS

QUESTION: Admiral Nyquist, the Navy has estimated a force requirement of 31 mine warfare ships. Do you anticipate increasing the total number of MCMs to be purchased?

ANSWER: Currently it is not anticipated that more MCMs will be purchased. However, in December 1988 the Chief of Naval Operations determined that the need existed to conduct a formal review of our mine countermeasures requirements. To do this a working group has been formed to examine the current force structure versus the current threat. This effort will result in a Chief of Naval Operations Executive Board (CEB) scheduled to meet this summer.

QUESTION: The Navy plans to decrease the time it needs to clear mines from U.S. ports by doing detailed surveys that chart and identify all the mine-like objects in the channels that ships use to transit from port to the open ocean. These surveys are called Q-route surveys. What impact will the delays in the actual and projected deliveries of the first eight MCM-1 ships between 12 and 46 months have on completion of these Q-route surveys?

ANSWERS: None. COMINEWARCOM has recently convened a Q-route Adhoc Working Group for the expressed purpose of finalizing plans to complete Q-route surveys. The plans developed will accomplish this detailed Q-route survey by the end of calendar year 1991. The plans call for the use of various assets including MSO's, COOP craft and Coast Guard buoy tenders.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

USS ROBERTS/ IOWA

QUESTION (a): What are the latest estimates of the costs to repair the USS SAMUEL B. ROBERTS and the USS IOWA?

ANSWER (a): Of the $96 million Congress allocated to repair the USS ROBERTS, $59 million is being spent for this work.

The repair assessment for the full restoration of USS IOWA's Turret II is $14 million.

QUESTION (b): Please discuss the planned use for the remainder of the $96 million provided for the frigate if the cost is less than this amount.

ANSWER: (b): The remainder of allocated funds not used in the repair of ROBERTS was placed in the depot maintenance account to be used for other ship repair.

QUESTION (c): Could any excess funds from the repair of the frigate be applied to the repair of the battleship?

ANSWER (c): The $96 million allocated to repair ROBERTS are FY 89 dollars and cannot be used to repair IOWA currently scheduled for availability in FY 90.

SSN 688

QUESTION: Testimony last year from the Assistant Secretary of the Navy, Shipbuilding and Logistics, and the Commander, Naval Sea Systems Command, revealed substantial schedule slippage and target cost overrun problems on all SSN 688 LOS ANGELES Class attack submarine contracts funded from FY 80 through FY 87. What is the status now of this situation? Please provide in your update an estimate of the potential total financial liability to the Government of the target cost overruns, as estimated by both the contractors and the Navy, and a discussion of the ability of the Navy to absorb this liability with prior year appropriations.

ANSWER: Both shipbuilders, Electric Boat Division (EBDIV) and Newport News Shipbuilding (NNS) have submitted new construction schedules. The schedule submitted by EBDIV reflects delays attributable to the 3 1/2-month strike which was settled in October 1988. The new delivery dates have been agreed to by both the company and the Navy. The delivery dates proposed by NNS are being negotiated. With regard to the over target cost increases, the Navy's estimate of the Government's share for the 26 SSN 688 submarines now under contract (FYs 80-89) is $727.7 million. (This is broken down as follows: NNS $510.0 million, EBDIV $217.7 million). The shipbuilder's estimates at completion would yield a Government liability of $575.1 million. These over target cost increases are attributable to a number of causes. First, the two shipbuilders actively competed for the contracts to build these submarines. These were Fixed-Price/Incentive (FPI) contracts with a 50-50 shareline. As the contractor exceeds target cost, he and the Government share equally in the over target cost increase. The Navy believes that both shipbuilders have made aggressive business decisions in the proposal pricing process. Additionally, the strike at EBDIV and problems at NNS in utilizing the new modular construction facility have contributed to the over target cost increases. A request for equitable adjustment (REA) was submitted by EBDIV. This is related to the changes associated with the improved SSN 688 Class submarine. This REA was adjudicated. A similar REA is being submitted by NNS. The cost of this REA is not yet determined. The Navy is currently reviewing the SCN prior-year appropriations to determine our ability to absorb these increases.

SSN 21

QUESTION: The contract bids for the lead ship of the SSN 21 SEAWOLF Class of attack submarines were higher than the Navy expected. The Navy states that in amending the FY 90-91 Navy shipbuilding budget request, the FY 91 SSN 21 SEAWOLF program cost was increased by $255 million "to reflect the repricing of follow-on ships due to the lead ship award experience." (This increase was partially offset by a decrease of $87.9 million to realign the inflation adjustment.) The FY 91 request funds two SSN 21s. It would thus appear that, other things held equal, the cost of each follow-on submarine has increased by about $125 million. In light of this, does the Navy not anticipate any problem in meeting the procurement cost ceiling specified by former Secretary of the Navy John Lehman for the follow-on SSN 21 SEAWOLF Class submarines of $1.0 billion each in FY 85 dollars for the fifth and approximately 25 following ships in the class? Please explain how the projected cost for the follow-on units in the SSN 21 SEAWOLF Class has changed, and how the Navy plans to stay within the $1.0 billion unit cost ceiling.

ANSWER: The average unit cost of the fifth and follow-on SSN 21 Class submarines is currently estimated at approximately $1.0 billion in FY 85 dollars. This figure reflects adjustments for yard specific inflation, much of which can be attributed to unanticipated increases in overhead and material costs over the past few years. This is primarily due to a decline in overall submarine workload. The Navy considers the $1.0 billion cost goal attainable, and will continue working with industry representative to refine cost reduction efforts.

USS ENTERPRISE

QUESTION: The Navy has recently supplied to Congress its estimate of the cost to carry out the refueling complex overhaul (RF/COH) of the one-of-a-kind nuclear-powered aircraft carrier USS ENTERPRISE. Upon completion of the USS ENTERPRISE RF/COH, the Navy plans to carry out a string of RF/COHs in the 1990s on the first three NIMITZ Class nuclear-powered aircraft carriers. What is the Navy's current estimate of the cost to carry out an RF/COH on a NIMITZ Class ship as opposed to the USS ENTERPRISE? Please provide a detailed, side-by-side cost comparison, with an explanation of the differences between the two.

ANSWER: The cost of a NIMITZ Class refueling/overhaul cannot be reasonably estimated at this time. The first refueling/overhaul of a NIMITZ Class carrier is not planned to start until FY 94. With 5 more years of operation before the ship enters the shipyard, the necessary repairs are not known. Further, while emergency NIMITZ Class refueling capability exists, the Navy is still developing detailed procedures and equipment required to maximize efficiency and effectiveness of the upcoming planned refuelings. Nonetheless, refueling/overhauls of the NIMITZ Class carriers are expected to be less expensive than the USS ENTERPRISE:

- The age of the NIMITZ Class carriers at the time of their refueling/overhauls will be in the 18- to 20-year range as opposed to the 30-year-old USS ENTERPRISE.
- The NIMITZ Class has two reactor plants compared with eight in the USS ENTERPRISE.
- USS ENTERPRISE, being the first of the "heel to toe" refuelings of nuclear carriers at Newport News, will help defray some of the start-up costs of the NIMITZ Class refueling production line.
- Since there is a NIMITZ Class family of ships with similar propulsion plants, sequential refueling/overhauls will allow for a more economical refueling/overhaul process.
- Since the production line for constructing NIMITZ Class carrier propulsion plants is still open, parts can be procured at a lower cost than manufacturing components that are out of production.

MHC-51 UNIT COSTS

QUESTION (a): The Navy states that in amending the FY 90-91 Navy shipbuilding budget request, the unit cost of the MHC-51 Class of coastal minehunters was increased "as a result of higher than anticipated lead ship construction costs." What was the originally estimated MHC-51 unit cost and what is it now? Please provide a detailed side-by-side comparison of the differences of the cost components, with an explanation of the differences between the two.

ANSWER (a): The weapon system cost for the 17 MHC-51 Class ships was originally estimated at $1345.8 million as reflected in the FY 90-91 President's Biannual Budget Submission data sheets of January 1989, including $14.7 million of battle spares. In constant FY 90 dollars and not including the battle spares, the unit cost was $77.6 million. The reprice of the class costs, submitted in the amended budget submit with only one ship in FY 90, is $1585.8 million including $15.0 million for battle spares. In constant FY 90 dollars without battle spares, the unit cost is $90.5 million. The difference between the two budgets is an increase in the basic construction costs associated with higher than originally estimated material costs experienced by the lead shipbuilder and the impact of the change in acquisition profile.

QUESTION (b): It isn't clear how construction problems on the lead ship can lead to an increase in the cost for follow-on units; please explain.

ANSWER (b): Construction problems in the lead ship have not been the cause of the increase in cost for the follow-on ships. The increase in the basic construction costs is associated with higher than originally estimated material costs experienced by the lead shipbuilder, therefore, expected on follow-on ships.

MHC-51 COASTAL MINE HUNTER UNIT COSTS

QUESTION: The Navy states that in amending the FY 1990-FY 1991 Navy shipbuilding budget request, the unit cost of the MHC-51 class of coastal mine hunters was increased "as a result of higher than anticipated lead ship construction costs." Provide a unit cost above which it would make sense to terminate the MHC coastal mine hunter program in favor of additional ships of the more capable MCM-1 Avenger class of mine countermeasure ships or a lower cost, less capable alternative, such as converted yard patrol craft.

ANSWER: While the MHC-51 has incurred some cost increase, there is still a significant delta between the cost of an MCM and an MHC. The delta between the two ships, in fact, is probably a more accurate barometer to use than the unit cost of a single MCM or MHC. To compare the cost of the first MHC with the final MCMs is not valid. You need to compare the average cost of MCMs with the projected average cost of MHCs over the total class by using the same fiscal year dollars. It would be inaccurate to state a specific dollar threshold as to where MHCs would not be purchased. That decision is a budget decision which is reviewed each year. The Navy strongly supports the total 17 ship MHC program at its current estimated cost. The mission of an MHC versus a yard patrol craft cannot be compared. They are designed to perform entirely different missions. This summer's Chief of Naval Operations Executive Board (CEB) will examine mine countermeasure program.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

U.S. POST-START STRATEGIC FORCE STRUCTURE

QUESTION: Under the START framework that both sides have agreed to in Geneva, the U.S. will be allowed 4900 ballistic missile RVs. The Navy five-year plan shows 21 TRIDENTs authorized by 1994. Twenty-one TRIDENTs would have a total of 4032 RVs. Does this mean the Navy believes the Air Force should be allowed no more than 868 RVs under likely START ceiling?

ANSWER: The Navy's plan to build a minimum of 21 operational TRIDENTs is based upon appropriate, time-phased replacement of retiring SSBNs. We believe that it would be premature to define a specific force now since this would preempt our START negotiators. Prudence dictates that such a decision process should be evolutionary in nature and based on threat assessment, technological advances and fiscal realities. We believe that survivable SSBNs must continue to provide a significant share of our nation's future deterrent capability. It is to our advantage to carry out the President's Strategic Modernization Program by continuing to build one TRIDENT submarine per year and to resist pressure to decide upon an ultimate TRIDENT force level now.

TRIDENT FORCE SIZE

Question: You show 21 TRIDENTs through 1994. Does the Navy have any idea how many TRIDENTs it wants as an overall fleet objective?

Answer: The final force level of TRIDENT submarines has not been determined. Several factors, including arms control agreement, the composition of the other legs of our strategic Triad, and changes in the Soviet target base will influence any force size decision. The FY-90 budget submission requested the 17th TRIDENT submarine which would not be delivered until 1996. The POSEIDON submarines will be retired by the end of this century. The Navy intends to maintain an economical production rate of one TRIDENT submarine per year to maintain an adequate force level while replacing older POSEIDON SSBNs.

TRIDENT SUBMARINE PRODUCTION

Question: If we were to slow TRIDENT production to one every two years, how much would the unit cost of a TRIDENT sub go up?

Answer: Slowing TRIDENT production to one every two years would force an immediate increase of approximately $105 million in the unit cost of a TRIDENT submarine. This increase is due to a loss of learning at the shipyard caused by a break in production ($60 million) and a loss of GFE-related savings caused by cancellation of quantity buys ($45 million).

In addition, there would be an impact for unabsorbed overhead which would vary depending on the shipbuilder's business base and their ability to absorb the loss of a particular ship. Such a loss would substantially increase the price for other submarines constructed at Electric Boat as well as that for subsequent TRIDENT hulls. For example, loss of the FY 91 ship would cost the government about $100 million in unabsorbed overhead, absorbed by existing contracts on the shareline and by future work on a 100% basis.

Moreover, delay of any ship which has been awarded competitively would eliminate the savings resulting from the competition, since that hull is certain to cost more when procured on a new contract. If, for example, the FY 90 ship were eliminated, the government would lose much of the savings realized by the competition for the FY 88 - FY 90 ships. The savings that resulted from that competition were primarily on the FY 89 and FY 90 ships, with the FY 90 ship the least expensive of the three. Failure to exercise the FY 90 option to the FY 88 contract would result in an additional cost of no less than $70 million for that ship when procured on a new contract.

Question: Both for budgetary reasons and because of likely START ceilings, doesn't it make sense to slow down TRIDENT sub production?

Answer: Slowing down the TRIDENT submarine production rate would be imprudent since this would result in increased costs and would preempt START negotiations.

U.S. POST-START STRATEGIC FOR STRUCTURE

QUESTION: If the Navy were allocated the same percentage of ballistic missile RVs under START that it has today (70%), it would have about 3400 RVs. Rounded off, that would be 18 TRIDENTs. The TRIDENT you ask for in your FY90 budget would be the 17th TRIDENT. In fact, there are long lead funds for the 19th TRIDENT. Do you think it would be wise for the U.S. to put itself in a position where we would be dismantling billion dollar subs that were only 10 years old?

ANSWER: The force structure flexibility inherent in the U.S. proposed START Treaty provisions will not place us in the position of dismantling newer SSBNs. The continued construction of one TRIDENT per year gives us the flexibility to react positively to any potential arms control agreement, evolving threat, or Congressionally mandated revision to this plan. The production of one TRIDENT submarine per year across the FYDP will result in 21 operational TRIDENTs to replace the aging POSEIDON submarine force by the turn of the century.

POSEIDON SUBMARINE OVERHAUL/OPERATION/DEACTIVATION COSTS

Question: How much does it cost the Navy to overhaul a POSEIDON Submarine? How much to dismantle it? How much to operate it for a year? How much to deactivate it?

Answer:

Overhaul: SSBN overhaul costs vary with each ship depending on the scope of required work. A refueling overhaul would cost between $150-$170 million.

Dismantlement/Deactivation: Missile compartment dismantlement is included in the deactivation of an SSBN. An SSBN deactivation costs between $22-$30 million.

Operating Cost of a POSEIDON Submarine: The annual operating costs for a POSEIDON Submarine totals approximately $10 million.

POSEIDON SUBMARINE OVERHAUL/DEACTIVATION PLAN

Question: As POSEIDON submarines continue to come up for major overhauls, does the Navy plan to deactivate them instead?

Answer: The last scheduled POSEIDON submarine overhaul is the USS ALEXANDER HAMILTON (SSBN 617), which commenced 30 November 1986 and is scheduled to complete on 17 July 1989. The Navy intends to deactivate the remainder of the POSEIDON submarines as they become due for overhaul or at the end of ship life, whichever occurs first.

POSEIDON OVERHAUL/DEACTIVATION SCHEDULE

Question: What is the schedule for future POSEIDON overhauls/deactivations?

Answer: No further POSEIDON submarine overhauls are scheduled. The POSEIDON submarine deactivation schedule for FY 1990 and FY 1991 is shown on the following table:

FY	90	91
POSEIDON C3	3	0

The period beyond the budget years of FY 1990 and 1991 reflect internal DOD planning assumptions which have not undergone the same degree of budget scrutiny and are not presented in the level of detail found in budget documents.

FAST SEALIFT SHIPS

QUESTION: Has the Navy ever thought about buying Fast Sealift Ships and leasing them back to the private sector with a stipulation that they be available when called to return to military duty when needed?

ANSWER: Navy has recently canvassed the world market and there are literally no FSS like ships available for sale. Navy, in fact, owns the only FSSs. Hence a program of buying FSSs and then leasing them back to the private sector is not possible. The building of new and improved FSS like ships has been addressed in the Fast Sealift Technical Assessment Report recently completed by the Naval Sea Systems Command.

QUESTIONS SUBMITTED BY SENATOR FRANK R. LAUTENBERG

ACOUSTIC VIDEO PROCESSORS (AVPs)

QUESTION: Does the Navy intend to acquire production quantities of an acoustic video processor (AVP), and if so, when?

ANSWER: The Navy intends to procure AVPs beginning in FY 90 following completion of qualification testing in December 1989.

QUESTION: How many acoustic video processor (AVP) systems does the Navy intend to procure in FY 90?

ANSWER: The Navy intends to procure between 30 and 60 units in FY 90 based on the following requirements: 13 for the SURTASS program and between 17 and 47 for the AN/SQQ-89 program.

QUESTION: Will acoustic video processor (AVP) systems be procured as part of the DDG-51 shipbuilding programs? If so, how many ships will be outfitted with AVP systems?

ANSWER: The DDG-51 shipbuilding program plans to procure AN/SQQ-89(V) Anti-Submarine Warfare (ASW) Combat Systems. The current baseline includes the AN/SQQ-89(V)6 configuration which does not include AVPs. Incorporation of the AN/SQQ-89(V)10 system, which includes six AVPs per hull, is under review.

QUESTION: Would the Navy favor the holding of a competition for the production of an acoustic video processor (AVP) between those who could produce such a processor as a developmental item and those who could produce it as a Non-Developmental Item (NDI)? Why or why not?

ANSWER: The Navy conducted a competition for procurement of the AVP in FY 87. Use of NDIs was permitted and encouraged by the tight development schedule. No industry proposal for the AVP requirement was purely an NDI. The winning design uses widely accepted industry standards, such as VME backplane and circuit card formats, 68020 microprocessors, Versatile Real Time Executive (VRTX) operating system, and Graphics Kernel System (GKS) graphics language in an open architecture to meet the development schedule constraints, and to allow the Navy to more rapidly and inexpensively exploit commercial developments in display technology. The AVP design will be competitively produced by the selected leader/follower team of Diagnostic/Retrieval System (DRS), Oakland, NJ, and Motorola, Tempe, AZ. The AVP resulting from the Navy's competitive program completely meets the current requirements, represents an NDI, logistically-supported member of the AN/UYQ-21 display system inventory in FY 90, and provides enhanced growth capabilities to meet evolving requirements.

QUESTIONS SUBMITTED BY SENATOR TOM HARKIN

ADVANCED MINE DEVELOPMENT

QUESTION: An early cooperative R&D initiative between the UK and the US Navy was the Advanced Sea Mine (ASM) program to develop a medium to shallow depth mine. The UK terminated the program because of funding constraints and now the Navy has done the same. Where do we go from here? Does the Navy continue to have a requirement for a mine of this nature?

ANSWER: The Navy continues to have a need for a medium depth mine. The Navy is currently conducting an assessment of the national requirement and will issue a new operational requirement leading to a national development program.

QUESTION: What about the CAPTOR mine which is the free world's only deep water anti-submarine warfare (ASW) mine? The fiscal year 1988 Authorization and Appropriations Acts included additional funds to improve the warhead lethality and detection sensitivity of the CAPTOR. When do you envision the improved CAPTOR assets will be available to the fleet?

ANSWER: The expected IOC date for the improved CAPTOR (Mine MK60 Mod 2) is fiscal year (deleted).

QUESTION: What are the views of the Theater Commanders, primarily CLINCLANT and CINCPAC, with regard to the need to improve the capabilities of our CAPTOR mines?
ANSWER: The CINCs (deleted).

QUESTION: Is it your belief that the CAPTOR capability will deteriorate as the Soviet submarine force becomes quieter?
ANSWER: (Deleted.)

QUESTION: When is the (deleted) mine scheduled for Full Scale Engineering Development (FSED)?
ANSWER: FSED of the (deleted) is expected to start in (deleted).

QUESTION: Are the planned CAPTOR improvements in a technological position that this program could be moved forward to counter the Soviet advances in submarine quieting and survivability? I believe the 1988 funds were provided to enhance our ASW mining capability in the near term.
ANSWER: Congress provided funds for CAPTOR improvements in fiscal year 1988. The progress being made is commensurate with that funding level, plus planned FY90 and beyond Navy budget levels. At this point progress is more fiscally constrained than technologically constrained. The program could be moved forward somewhat with an early modest increase in funding, but the Navy's current budget in this area was established in view of overall Navy R&D priorities. Of course there is a limit to how rapidly a program of the technical complexity of Improved CAPTOR can be conducted even with an increased budget.

QUESTION: It is my understanding that the performance envelope of the CAPTOR mine overlaps partially with the envelope of the Advanced Sea Mine. Is it possible that the CAPTOR mine could be modified to meet the requirements for a medium to shallow depth mine?
ANSWER: The performance envelope of CAPTOR and the Advanced Sea Mine did overlap. In theory, (deleted). However, (deleted). It is not feasible to modify the existing CAPTOR mines for use in medium to shallow water. It should also be noted that the number of existing CAPTOR mines is much too small for it to be able to meet both the deep water mining requirement and the medium to shallow water requirements with a single weapon.

QUESTIONS SUBMITTED BY SENATOR ALFONSE M. D'AMATO

SUBMARINE REQUIREMENTS

Question: The numbers available to me comparing attack submarine (SSN) procurement and retirements through 2005 indicate that the Navy will be unable to sustain the Chief of Naval Operations' requirement for 100 modern nuclear attack submarines by the year 2000 even if Congress fully funds the SEAWOLF program. What plans does the Navy have for addressing this shortfall?

Answer: The Navy remains committed to a minimum SSN force level goal of 100 multimission SSNs which is required to execute the U.S. Maritime Strategy against the Soviet threat of the 1990s and beyond. The current production of the Improved SSN-688 Class and the introduction of the SSN-21 SEAWOLF Class will significantly enhance our submarine force's capability. With these more capable ships, we will be able to carry out the demands placed on the attack submarine force by the Maritime Strategy within the SSN force level goal of 100 SSNs.

Question: Considering recent Soviet advances in submarine technology and capability, what impact will this shortfall have on our attack submarine arm being able to carry out its mission?

Answer: With the Improved SSN-688 and SEAWOLF Class submarines, we will be able to carry out the demands placed on the attack submarine force by the Maritime Strategy.

Question: In 1980, the CNO's requirement for modern nuclear SSNs was 100. A decade later, after the WALKER and TOSHIBA affairs significantly improved Soviet submarine capabilities, the CNO's requirement remains 100? How can this be?

Answer: The current production of improved SSN-688 with their improved fire control system and propulsion plants are twice as effective as the initial 688s. SEAWOLF's design is optimized to take advantage of all currently feasible submarine warfare technological advances. Across all mission areas SEAWOLF will be superior to the best projected Soviet submarine well into the twenty-first century. The continued introduction of the improved SSN-688 Class into the fleet and the IOC of the SEAWOLF will allow us to execute the Maritime Strategy within the CNO's goal of 100 nuclear SSNs.

Question: Last year's Five-year Shipbuilding Plan included ten LOS ANGELES Class submarines and five SEAWOLF Class submarines. This year's plan calls for one LOS ANGELES Class submarine and 11 SEAWOLF Class submarines. Why the radical change?

Answer: Last year's five-year shipbuilding program included FY88 through FY92 projections. The current five-year plan includes projections for FY90 through FY94. The actual change in this plan resulted in a reduction of four SSN-688s and the addition of one SSN-21 in FY92 while adding six planned in FY93 and FY94. To achieve the ASW force structure we envision, the Navy had to measure present and future mission requirements against fiscal realities. The reduction in SSN-688 Class submarines is strictly a function of these fiscal constraints. In reaching budgetary decisions we have ensured that our current and future total naval ASW capabilities are balanced and effective in the full range of encounters at sea. This reasoning will provide the most effective use of limited ASW fiscal resources while focusing our efforts on SEAWOLF production.

Question: A block obsolescence problem looms through the next decade. How certain is the Navy of the SEAWOLF's accelerated schedule considering the technological risks?

Answer: Detail design and construction of SEAWOLF is on track and the Navy is confident that lead ship delivery schedules will be met. The current SEAWOLF Class rate of production is designed to replace the SSN-637 STURGEON Class as they reach their nominal 30-year life and are decommissioned. With the far more capable SEAWOLF, we will be able to carry out the demands placed on the attack submarine force by the Maritime Strategy within the SSN force level goal of 100 SSNs.

Question: Should SEAWOLF production be delayed, how will the Navy compensate to maintain its stated requirement of 100 modern, nuclear attack submarines?

Answer: As an island nation dependent on the seas for commerce and defense, it is absolutely vital for the United States to maintain Maritime supremacy. A key part of our Maritime Strategy is a force level of 100 SSNs which is vital in the execution of our ASW defense and forward Maritime Strategy. Even with the current SSN-21 shipbuilding rate, we will be close but not achieve our 100 SSN force level goal. The significant improvements of the I688 SSN Class and the revolutionary warfighting capability of the SSN-21 will still allow us to maintain undersea superiority. However, further reductions of the SSN-21 shipbuilding rate would seriously jeopardize our ASW and power projection capability in the 21st century. There is no foreseeable warfighting substitute for the ASW and power projection capability of the SSN-21.

ANTI-AIR WARFARE SURFACE COMBATANT SHORTFALL

QUESTION: At the same time that the Navy is terminating production of its only air superiority fighter, the F-14, Admiral Trost has testified that the Navy is 36% short of its goal for Anti-Air Warfare (AAW) capable surface ships. What will pick up the AAW slack?

ANSWER: Modern Anti-Air Warfare (AAW) combatants (Battle Force Capable Ships) are our most critical force structure shortfall. We have only 64% of our requirement and will fall to 46% by FY-93. We need five to six DDG 51's per year to overcome this shortfall. At the present rate of goals, but will be able to replace those ships we are retiring by the late 1990's.

USS IOWA

QUESTION (a): Can you review what has been learned about the causes of the turret explosion aboard the USS IOWA?

ANSWER (a): We regret that we cannot do that at this time because the investigation is still in progress. However, we estimate that this information will be available in 1 to 2 months.

QUESTION (b): When will the Navy begin repairs?

ANSWER (b): The damage in Turret 2 was removed, cleaned up, and preserved prior to the USS IOWA's deployment on 6 June 1989.

When it returns from deployment in January 1990, it will go into a restricted availability at the Norfolk Naval Shipyard and repairs will commence. The repairs should be completed in June 1990.

QUESTION (c): When will the restriction on the firing of the battleships' main guns be lifted?

ANSWER (c): The week of 4 June 1989, the CNO modified the firing restriction on the battleships to authorize firing in time of war and special operations training events. It is anticipated that removal of all restrictions on firing could occur within the next 30 days.

SUBMARINE MISHAPS

Question: Recently, the USS HELENA was reported to have surfaced crippled off Hawaii with problems involving her main reduction gear, the USS GURNARD was reported to have run aground off San Diego, the USS BLUEBACK suffered an engine room fire, and two large cracks were discovered in the outer hull of a submarine under construction at Electric Boat. What can you tell us about these incidents?

Answer: The USS HELENA (SSN-725) experienced a problem with her main reduction gears while operating in the Pacific. The problem occurred on 17 May 1989 while the ship was conducting routine engineering drills en route to Pearl Harbor. The ship surfaced after the problem. The cause of the incident is under investigation. There were no personnel injuries. The nuclear reactor was not affected.

USS GURNARD (SSN-662) ran aground while carrying out operations off the coast of California. No personnel injuries occurred. USS GURNARD returned to port and is undergoing a thorough assessment of possible damage. The cause of the grounding is under investigation.

USS BLUEBACK (SS-581) experienced a minor electrical fire in the switching network of propulsion system while operating off the southern California coast. There were no injuries to personnel and no major damage to the submarine. Repairs to the affected components have been completed and BLUEBACK has returned to service.

Two small cracks were discovered in the hull plating on USS TOPEKA (SSN-754) during a normal hull inspection. The affected hull plating area has been repaired. Inspection of hull plating on other ships revealed no evidence of additional undetected plate cracks. The cause remains under investigation. USS TOPEKA is continuing in the ship construction process.

ELECTRIC DRIVE

QUESTION: The Navy apparently reprogrammed 2/3rds of the money appropriated in FY 88 for electric drive to other programs? What were those programs? What prompted the wavering of the Navy's commitment to electric drive research?

ANSWER: The Electric Drive Program funding was restructured in FY 88 due to the inability to award the contract for full scale development of electric drive. The original bids received

greatly exceeded available program funding. The program was downscoped and restructured and a revised Request for Proposal (RFP) was issued in the first quarter. Due to the exceptions raised by the bidders to the revised RFP, "Best and Final" bids were required. This process resulted in the contract award slipping until FY 89.

Due to the inability to award the Electric Drive Contract in FY 88, the program was restructured by increasing the funding budgeted for this program in the outyears of the FY 90 budget starting in FY 91 to maintain the Program's I.O.C.

Those funds budgeted for the FY 88 requirement of the full scale machinery development contract were reprogrammed to support other high priority requirements. The $8.0M from the Electric Drive Program was equally distributed between the AEGIS Extended Range Missile Program and the Standard Missile Improvement Program.

The Integrated Electric Drive Program continues to have our enthusiastic and unwavering commitment.

QUESTIONS SUBMITTED BY SENATOR MARK O. HATFIELD

INACTIVE SUBMARINE COST

QUESTION: What is the annual cost of maintaining an inactive nuclear-powered submarine in protected floating storage? What has been budgeted in FY 90 to cover these costs?

ANSWER: The annual unit cost to maintain an inactive nuclear submarine is currently about $50,000. This pays for required inspections, maintenance/preservation, repairs and engineering and administrative services. In FY 90, approximately $1,400,000 will be required to cover these costs.

DISPOSAL METHOD

QUESTION: Once the reactor compartments have been removed, what is the method and plan for the disposal of the submarine hull?

ANSWER: There are three options under consideration for the final disposition of rejoined submarine hulls once the reactor compartments have been removed. They are: at-sea scuttle, cutting up for demilitarization and scrap metal recycling, and indefinite storage until the hull can be scrapped without security restrictions. A fourth option - target sinking, in conjunction with weapons testing, has been discounted due to the possibility of security compromise relative to hull failure/vulnerability and weapons effectiveness information. The Navy has initiated MILCON projects to expand secure waterborne storage for rejoined hulls through the mid-90s and will take action for final disposal after thorough evaluation of the relative security, cost schedule and environmental aspects for each of the disposal options.

BUDGET AUTHORITY FOR DISPOSAL

QUESTION: What budget authority would be needed from Congress to execute the disposal plan?

ANSWER: Disposal funding will be requested in the appropriate budget activity elements for SSBNs (O&M,N, BA-1) and SSNs (O&M,N, BA-2) after the final disposal method has been selected.

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will stand in recess until 9 a.m., June 1, when it will hold a hearing on the Navy Posture, and will receive testimony from the Secretary of the Navy and the Navy Chief of Naval Operations, and also the Marine Corps Chief of Staff.

Thank you very much.

[Whereupon, at 2:50 p.m., Wednesday, May 31, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

TUESDAY, JUNE 6, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Sasser, Bumpers, Stevens, Kasten, D'Amato, and Specter.

DEPARTMENT OF DEFENSE

TACTICAL AIRPOWER

STATEMENTS OF:

VICE ADM. RICHARD M. DUNLEAVY, ASSISTANT CHIEF OF NAVAL OPERATIONS FOR AIR WARFARE, DEPARTMENT OF THE NAVY

LT. GEN. RONALD W. YATES, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION, DEPARTMENT OF THE AIR FORCE

LT. GEN. CHARLES H. PITMAN, DEPUTY CHIEF OF STAFF FOR AVIATION, U.S. MARINE CORPS

ACCOMPANIED BY VICE ADM. JOSEPH B. WILKINSON, COMMANDER, NAVAL AIR SYSTEMS COMMAND

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. The subject of our hearing this morning is the tactical aircraft and related equipment requirements of our Navy, Marine Corps, and Air Force. Our focus is on the force structure goals and how the acquisition programs requested in fiscal year 1990 address these needs.

Tactical airpower is one of the largest funding segments in the defense budget. The high cost of military fighter aircraft and missiles necessitates that billions be spent annually to develop, procure, modernize, and maintain our tactical air assets.

Today's austere fiscal requirement requires that we make certain that the funding provided for these purposes is the best use of our limited resources, that efforts are made to clearly define priorities and to minimize duplication both within and among the services.

For several years the Congress has directed that the military services streamline the number of different systems and increase commonality of aviation programs. It is only through such practices that we will be able to afford to replace and maintain the necessary number of aircraft and missiles. This need for commonality is one reason that I chose to review these programs with the three services side by side instead of at separate hearings.

Earlier this year in closed session the subcommittee reviewed two future tactical aircraft—the advanced tactical fighter and the A-12 advanced tactical aircraft. These are two examples where the Navy and Air Force plan to use common systems. In our review this morning, we will examine current aircraft and related equipment programs to ensure that the services are emphasizing commonality and minimizing duplication in these efforts.

To help us in our review, we are pleased to have Lt. Gen. Ronald Yates, the Secretary Air Force Principal Deputy Assistant for Acquisition; Lt. Gen. Charles Pitman, the Marine Corps Deputy Chief of Staff for Aviation; and Vice Adm. Richard Dunleavy, the Assistant Chief of Naval Operations for Air Warfare.

I gather that Admiral Dunleavy is making his first appearance before the subcommittee in his new position. Congratulations, we welcome you, sir. You may proceed as you wish. All of your statements have been made part of the record in total.

Senator, do you have any statement you would like to make?

STATEMENT OF SENATOR D'AMATO

Senator D'AMATO. Mr. Chairman, I do, and with the chairman's indulgence and the indulgence of the distinguished witnesses I would like to take a moment or two more than usual in an opening statement.

Mr. Chairman, I appreciate having the opportunity to hear from the distinguished witnesses today on the important subject of tactical airpower. I am very concerned about the Pentagon's proposed cancellation of the F-14D Tomcat production program.

If the Navy gives up buying new F-14's, Grumman will be forced to permanently close its manufacturing facility. That is a fact. Whether it takes place in a year or 2 years, the fact is that we will lose this important part of our industrial base.

Consequently, the Navy will be irreversibly committed to waiting for the Navy version of the advanced tactical fighter, the NATF, which is still on the drawing board. I want to emphasize that. It is still a concept; it is on the drawing board.

Mr. Chairman, the Navy and the Air Force have tried to codevelop fighters in the past, and they have had less than success. As a matter of fact, they have had some very dismal failures, such as the TFX. I believe that we are jeopardizing the future of the Navy's fleet defense to be totally dependent upon arrangements so fraught with uncertainty.

Canceling the F-14 production and hoping that the NATF will be available when it is needed is just too risky. It is too risky for the Navy, it is too risky for our national security.

Mr. Chairman, if I might, let me illustrate the situation with a few charts that my staff has produced.

F-14 PRODUCTION

The first chart shows the effect of cutting F-14 production on the fighter needs of the Navy. The data is based on the NATF being delivered on time. If it is delivered on time, which would be one of the first times that we have ever had a program of this magnitude come in on time, we are still going to see the NATF enter the inventory just as the old F-14's begin to retire. This will occur in 1999.

What is the result if we have manufacturing on time, and we look at the year 2007? We have a 21-percent shortage in the naval fighter force as a result of NATF being on time. Now this situation is one that is bad enough. If everything is on time, if everything is on schedule, we will have a 21-percent shortfall.

That is bad enough, but what happens if the NATF follows the historic pattern? I am not suggesting an emergency must take place, but only the historic pattern of most large weapon programs where there are minimal delays. Let us take a minimal delay. Let us take a delay of 3 years. It could be a lot worse.

Chart 2. This chart reflects a 3-year slippage in NATF deliveries. Now the maximum shortfall which can be expected grows to something on the order of 53 percent. Now that is just too big a risk.

Now let us look at chart 3.

If the F-14 is produced at the original planned rate—that is, if we continue at 12 per year—and the NATF is on time, there will be no shortfall; however, the consequences of a 3-year slip will still be serious even if you have F-14 production. You will have a 32-percent shortfall.

Putting all of our eggs in a basket which is a basket rather tenuously tied together is exactly what we will be doing if we cancel the F-14's. Now these are not statistics that came out of the air; these are facts. This relates to actual production. This relates to actual schedules. This relates to actual retirement of F-14's.

Mr. Chairman, I would hope that our colleagues on the Armed Services Committee will have an opportunity to review these facts also, and I would hope that the Pentagon would take a very close look at this. I think the Admirals and the witnesses here understand the severity of this. But they have budget constraints.

It is one thing to cut a budget and it is another thing to cut it in an area and a place that is going to jeopardize the security of this Nation. I believe that is exactly what will be taking place here.

I thank the chairman.

Senator INOUYE. Let me assure my distinguished colleague from New York that this matter will be very carefully considered and studied before any decisions are made.

Senator D'AMATO. Thank you, Mr. Chairman.

Senator INOUYE. Admiral?

PROCUREMENT

Admiral DUNLEAVY. Thank you, Mr. Chairman and distinguished members of the committee. This is my first time and I welcome the opportunity to appear before you with General Yates and General Pitman to talk about our naval aviation and marine aviation tactical airpower and naval aviation aircraft procurement.

Chuck is representing the Marine Corps, General Yates is from the Office of the Assistant Secretary of the Air Force for Acquisition. Having just taken over the leadership of naval aviation, I plan on continuing to work very closely with the Members of the Congress in order to maximize the warfighting capability of the Navy and the Marine Corps aviation.

But it has to be a balanced approach, a balanced program within the limits of fiscal constraints and prudent risk. Now some of the programs we talk about are no longer included and others reduced because of affordability. We, Chuck and myself, have submitted our statements for the record, but I would like to spend just a few moments discussing tactical aviation, primarily at sea.

The environment we see ourselves in today, with the changing Soviet Union and the rising of Third World nationalism and the proliferation of sophisticated weapons throughout the world, our bases are being limited around the world, overflight rights have been constrained. We as Americans have an ever-increasing dependence on sea trade and trade overall, the effectiveness of tactical airpower at sea is becoming more and more critical.

Again, the carrier battle group, with the Marine Expeditionary Force or unit embarked in amphibious ships, is still the most respected, responsive, most flexible, most prepared force we can send around the globe to do the work we are expected to do. It covers the entire spectrum of warfare. It is a balanced approach.

The structure we have now, with our 14 deployable carriers, due to affordability, with our air wings, our Marine aviation, and our land-based maritime patrol gives us the best punch right now for the cost. However, it is doing less because we are cut back. That is a conscious decision by the Secretary of Defense. It is an affordability problem, and we have to work with it. But we have to realize we cannot make all of our commitments around the world as before.

Coming recently from the fleet, I can give you a report that again our people are the critical thing. Readiness is exceptionally high. All of our carrier battle groups and Marines at sea, forward-deployed, are probably at the highest state of readiness I have seen in my 34 years in the Navy. In any one of our carrier battle groups, the availability of our aircraft is up in the high 80's, low 90's.

Our safety record last year was the best we have ever had, with 2.16, and today, in 1989, it is 1.95 per 100,000 hours. That is a giant step in retaining aircraft but, more importantly, good people.

The training we are doing around the world is critical and we are doing exceptionally well as illustrated by the shootdown we had just a few months ago. But we have to look at the compensation of our young people in the military. We have to make sure they get adequate pay in comparison with the civilian community.

The flying hour program is critical for naval aviators. I speak for all aviators. We have to fly the kids to make them very, very good—not just good but exceptionally good—so they are the best in the world. And they are. The American fighting man in the cockpit today is an extraordinary individual because he is flying a fantastic machine. He is also exceptionally well trained.

But if we do not support them by flying them enough then our retention problem comes up, and that is a serious problem we are looking at.

So, balanced with our 14 deployable carrier battle groups, we must maintain our pers tempo, ops tempo. We have 6 months deployed and 12 months in home waters. This is critical to maintain as we come down to 14 carriers.

We are transitioning to new systems. We look forward to the future and we have done a lot of homework on what we need to do as we transition beyond the 1990's and into the year 2000. We are going from the A-6 to the A-12, which is a classified program. But I have been briefed into it now for about a year and a half. I can tell you what I see is exciting. What we see coming down the line in the mid-1990's to late 1990's is a giant step forward in tactical air at sea.

The F-14, Senator D'Amato, is a critical part of our program, but we have to look at how we can get to the Navy ATF, and we are working very, very closely with General Yates and the Air Force on how we can participate in the Navy derivative of the ATF.

Our P-3, going to the P-7, is in the budget. We are working hard at long-range maritime patrol at sea.

The EA-6B is another critical program I am very concerned about as now the leader of naval aviation. Are we going to have enough to get to the advanced tactical system? We are going to be running out of the EA-6B in 1993.

HELOS AT SEA

The SH-3 is going to be replaced by the SH-60 Foxtrot, an exceptionally capable aircraft both on our carriers and our surface combatants. And in our training command the T-45 is critical. With it we train our young fellows to fight and we need to replace the T-2 and TA-4.

I can go on and on with what we are doing. I am confident we have a solid program that is going to give you the best possible product to put to sea embarked.

In summary, the carrier battle groups, with the Marine expeditionary units, provide for the maximum warfighting capability we have seen and have today. It deters any level of conflict around the world. It is mobile; it is flexible. You can gear it to how you want to fight, the way you want to fight. It is an exceptionally competent group of people and machinery.

PREPARED STATEMENT

That is my statement as a lead-in. If General Pitman does not care to make a comment at this time I will turn it over to General Yates.

[The statement follows:]

STATEMENT OF VICE ADM. RICHARD M. DUNLEAVY

INTRODUCTION

Mr. Chairman and distinguished members of the subcommittee, I appreciate your invitation to present the Navy's plans for aircraft procurement in fiscal years 1990 and 1991 and to update you on other significant programs which influence Navy and Marine Corps aviation's contribution to the current military strategy of the United States and tactical air power.

BUDGET OVERVIEW

As we enter the last decade of the 20th Century, Naval Aviation is embarking upon an essential modernization program, a program that is absolutely necessary in order that the United States Navy meets its global national security commitments of the 21st Century. Several programs have been terminated in earlier years (F-14A, EA-6B, A-6, AH-1, and P-3) in anticipation of urgently needed replacement programs on the near horizon. These new capabilities include the A-12, T-45 Training System, the P-7A, formerly known as Long-Range Air ASW Capability Aircraft (LRAACA), the F-14D, the EA-6B ADVCAP and the Navy version of the Advanced Tactical Fighter (NATF).

The revised Aircraft Procurement, Navy (APN) request for FY 1990 is $8,826 million, a decrease of $488 million from the level appropriated in FY 1989. The revised FY 1991 request is $9,518 million, an increase of $692 million over FY 1990. The requested funds in FY 1990 will procure a total of 140 aircraft, including 29 rotary wing, 5 training aircraft, and 106 fixed wing tactical aircraft. Because of overall budget constraints and affordability, modernization goals will be achieved at a slower rate than previously anticipated. Long-standing Congressional concerns on naval aircraft shortfalls and increasing average age should be alleviated in the late 1990s as a larger number of new aircraft begin to replace those whose service life is expended.

NAVAL AVIATION AND NATIONAL DEFENSE

As the leader of the free world, the United States is deeply and permanently committed to sea power for economic vitality and political stability. Globally, naval forces are the most visible reminder to our allies, friends and potential aggressors, of the United States' resolve to provide an umbrella of stability under which free world political and economic activity can flourish. The mobile and flexible forces of the Navy and Marine Corps contribute to global stability through their ability to confront potential aggressors and trouble makers with a broad range of military options--broad in geographic scope, rapid response time, and measured intensity. Our Carrier Battle Groups will continue to be the most respected, responsive, flexible and best prepared force, capable of reacting immediately, on a global basis, across the entire spectrum of conflict. The nation's diminishing access to foreign bases and overflight rights has the potential to limit forward basing of U. S. military forces. Our nation will increasingly rely upon mobile naval forces to fill this vacuum in deterring aggression and providing for regional stability. Our recent experience in the Persian Gulf serves only to reinforce this argument.

Carrier Battle Groups operate daily as they would in war--forward, near our allies, and where potential adversaries must be deterred. They operate throughout the world, with forces of our sister services and allies in maintaining necessary levels of readiness and training, not only to deter war but to fight and win should deterrence fail. Naval Aviation exercises in the environment and geographical areas in which confrontation would likely occur. The

Carrier Battle Groups with their long range, modern, air arms can deploy for as long as necessary and fight at whatever level of conflict the situation demands. Naval forces can affect world events quickly and decisively, and once political or military objectives are realized, rapidly withdraw without leaving a ripple in the water.

Carrier-based aircraft, in conjunction with shore-based maritime patrol aircraft, add an unequaled dimension to sea power. Sea power is mobile and flexible with global reach. Air power adds speed, altitude, and additional reach in a four-dimensional (surface, subsurface, land, air) warfighting environment. Carrier aviation can conduct offensive operations against targets ashore, afloat, or under the sea with the great advantage of rapid revisit capability. The ability of carrier-based aviation to employ the vast array of sensors and weapons required for successful antisubmarine and electronic warfare makes for an unmatched force multiplier. This concentrated offensive air power is an effective and highly visible deterrent which can freely operate independent of foreign shore bases, political constraints and the sovereign claims of other nations.

Unmanned air vehicles, cruise missiles, and other systems will develop as complements to air power at sea, but none will take the place of manned aircraft. When it becomes necessary to wrest and maintain air dominance over a battle space, when it becomes necessary to deliver heavy volumes of ordnance on a repetitive basis, when it becomes necessary to combat high speed, multi-threat and versatile undersea forces, and when there is a need for rapid and flexible logistics, there is and will be no substitute for air at sea.

For the present, our technological edge, better training, tactical initiatives and innovations, combined with the exceptional quality of our people, have given us the advantage. However, because our potential adversaries, Soviet Union and Third World alike, are rapidly acquiring improved weapon systems in every category, there is enormous justification for Naval Aviation to modernize at an accelerated rate.

NAVAL AVIATION PRIORITIES/ISSUES

The FY 1990/91 budget request will keep strong and flexible Naval Aviation forces on station and fully ready to meet any commitment. Our top priorities are people, readiness and safety, and modernization to a balanced force structure.

People Programs. Maintaining adequate levels of motivated and well-trained people to man Naval Aviation is my highest priority. They are, of course, the heart of our capability, now and in the future. The American sailor and junior officers are the ultimate force multiplier over any potential adversrry, but only well trained and motivated personnel can maximize the use of the sophisticated weapons needed to wage modern warfare. We must continue to maintain current PERSTEMPO/OPTEMPO goals (as Secretary Cheney has vowed to do) preserve the pilot training rate, the flying hour program, and technical training programs in order to meet commitments and retain our best people.

Our FY 1990/91 budget request represents an overall aviation manpower reduction, primarily related to force structure cuts. In fact, ship and squadron manpower has been reduced from 92 of required to the 90 percent level, with zero growth in shore-based billets. As a result, previously programmed growth was not attained. Fleet support capabilities ashore will be reduced along with the technical leadership and expertise necessary to support complex fleet weapon systems. Additionally, movement toward a better balance of sea duty tours and shore duty assignments has been delayed. If further manpower reductions are mandated, our capacity to bring new weapon systems on line effectively and to operate safely those presently assigned will be in question.

In an environment where manpower is stretched thin, retention has historically suffered. Retention of experienced officers and petty officers is intrinsic to readiness, economy and safety. Experienced personnel simply maintain and operate complex weapon systems more effectively, resulting in improved readiness and safety reflected by a lowered aircraft accident rate. Retention reduces training cost. In the case of pilots, these costs are dramatic; it costs approximately $1.25 million to train a fleet-ready aviator.

Based on initial returns, the aviation continuation pay (ACP) approved by Congress for FY 1989 appears to be successful; however it is too early to assess its impact on all aviation communities and designators. Additional incentives may be required for the nation to retain the proper number of pilots in military service given the highly demand for pilots in the private sector. Growth in high tech industry means our well-trained officers and petty officers are highly sought after in the civilian sector. It is absolutely necessary that military salaries and benefits keep pace.

Readiness. Readiness must be maintained for maximum warfighting capability. Naval Aviation, the essential component of American sea power, must remain capable of keeping conflicts small (geographic, time and intensity) to avoid escalation. Today, forces on station are ready. This was demonstrated when Iranian warships and gunboats were put out of action as recently as April 1988 and when two attacking Libyan MIGs were downed in January 1989.

To ensure our crews remain ready, President Bush's adjusted budget maintains flying hours at the minimum standards required for safety and readiness. It supports required airborne training at rates needed to deploy combat ready units and maintains that readiness during deployment. It will provide for shore-based support infrastructure which protects the material readiness of carriers and aircraft while emphasizing safety, reliability, and maintainability in operations. Further deterioration in the infrastructure, though, will adversely affect readiness--our ability to respond on short notice wherever and whenever required.

Balanced Forces. We must continue to provide a balanced Naval Aviation force structure which is optimized and modernized across all mission areas. The current force structure of 13 active and 2 reserve carrier airwings, three active and one reserve Marine Corps airwings, and the requisite number of maritime patrol squadrons and ASW helicopters provides that balance.

Modernization. Naval Aviation's modernization plan is both evolutionary (F-14D, EA-6B (ADVCAP), E-2C) and revolutionary (A-12, NATF), applying the latest technology to achieve superiority and survivability against sophisticated threats. We will capitalize on what Naval Aviation does best while integrating the strengths of sister services and allies. We will increasingly develop standoff weapons and electronic warfare systems as force multipliers. Through commonality and modular design Naval Aviation will continue to consolidate the number of different aircraft and weapon types to save manpower and support costs.

Safety. Naval Aviation has just completed the safest year in history--by a landslide! The CY 1988 rate was 2.16 mishaps per 100,000 flight hours with 48 Class A mishaps. This betters last year's record rate of 3.25 and 74 mishaps. Thanks to inspired leadership and proactive awareness at the operator level, the Navy has 26 more aircraft to fly this year than last. Our success is due in no small part to the cumulative effects of adequate flight hours and spare part funding in past years which facilitated aircrew training. But we are not content to rest at this low mishap rate. As good as was 1988, we still had 48 too many accidents.

FORCE MODERNIZATION AND STRUCTURE

It is essential to gain maximum benefit from each budget dollar; therefore, improvements and added capability are limited to only those necessary to improve safety, meet operational requirements, extend service life, enhance survivability, and improve maintainability through reduced costs and lower manpower requirements. Maximum competition, fixed price contracts, block upgrades, optimum use of acquisition streamlining, maximum standardization and commonality, conversion-in-lieu of procurement (CILOP), and weapon system improvement programs (WSIP) are all being used to ensure limited resources are used wisely. We are participating, whenever possible, in joint-service development programs. For example, Navy is firmly committed to joint development of the NATF.

Aircraft Carriers. The decision not to add another deployable carrier at this time keeps their level at 14. This force level will be required to support our peacetime deployment commitments.

USS CORAL SEA is deployed meeting national treaty commitments. CORAL SEA remains fully mission capable as she approaches her revised projected decommissioning in early FY 1990.

USS MIDWAY continues to operate in the Western Pacific, fulfilling the nation's commitments to our Western allies and assisting in our necessary Indian Ocean presence.

The nuclear refueling and complex overhaul of USS ENTERPRISE, which begins in 1991, is a smart business decision which will ensure a front-line nuclear aircraft carrier (CVN) for an additional 20 years.

Carrier Airwings. The Navy's near time complement of 13 active and two reserve airwings will meet the requirements of the current 14 deployable carrier force.

Strike Aircraft. The A-12 is a revolutionary program which will improve our all-weather attack capability by an order of magnitude. Our top warfighting acquisition priority, it will incorporate significant stealth characteristics and become the primary striking force of the Carrier Battle Groups. This vital tactical platform will be able to penetrate even the most heavily defended enemy areas to reach its targets. The Air Force has joined us in the development of the A-12 and is defining an A-12 variant for their use.

Until all medium attack squadrons are A-12 equipped, we will continue to operate the long range, all-weather, A-6 Intruder. As an interim measure to ensure its survivability in the near term, we are modifying it under the System/Weapon Integration Program (SWIP). This modification will permit a greater stand-off capability with HARM, HARPOON, Infrared and Laser MAVERICKS, SKIPPER and SLAM (HARPOON variant), and additional reliability/maintainability upgrades. No SWIP modification kits are budgeted in either FY 1990 or FY 1991 to accommodate the already programmed kit and rewing installations.

The F/A-18 strike fighter with its versatility, reliability, and survivability will be the workhorse of carrier air wings well into the 21st Century. Upgrades to the radar, engines, weapon system, and "Under the Weather" capability will further expand the mission potential. The FY 1990 request is for 66 aircraft, the beginning of a multi-year contract.

The AV-8B Harrier program has been restructured over the past several years to represent a solid balance between fiscal resources and combat capability. Operational experience with the AV-8B has shown the airframe to be reliable, maintainable, and capable of substantial growth. Night attack capability, upgraded engine, and perhaps a radar in the future will allow the AV-8B to expand its missions over a broad spectrum of operational and threat scenarios.

Amphibious Forces. The revised FY 1990/91 request terminates the V-22 Osprey program and requests a mix of substitute helicopters to perform the Navy and Marine Corps' missions. The MV-22 was a planned replacement for a number of aging CH-46/CH-53A/D medium lift helicopters. In view of the V-22 cancellation, the Department has proposed a mix of CH-60 and H-53 helicopters to satisfy the over-the-horizon medium lift assault requirements for the Marine Corps.

ASW Aircraft. Naval Aviation is a key element in antisubmarine warfare (ASW), the Navy's number one warfighting priority. In any confrontation with the Soviet Union, their numerical superiority in submarines will require use of air ASW. Naval aviation is a multiplier in the form of sea-based antisubmarine aircraft and land-based maritime patrol aircraft, specifically designed for the primary mission of dominating enemy submarine forces. ASW aircraft are the key to effective, coordinated ASW which links surface, subsurface and air elements through an increasingly sophisticated communications network. ASW aircraft are highly maneuverable and quickly redeployable weapon platforms possessing the capability of simultaneous track and attack of multiple targets. ASW aircraft, such as the P-3C, S-3B, and

SH-60B/F, can quickly reposition sensors and respond rapidly to long range ASW cues for either successful prosecution or false target elimination. In addition, aircraft can provide the frequently decisive element of battle--surprise. Our procurement plan, which is in consonance with the ASW Master Plan, is bound by affordability.

The P-7A, equipped with the Update IV avionics system, is the planned replacement for the older P-3As/Bs. In a cost cutting effort, we will early retire 73 of these older P-3A/B aircraft and temporarily reduce Primary Aircraft Authorization (PAA) in active and reserve P-3 squadrons. Our MPA force will operate with a reduced number of P-3 aircraft until the P-7A comes on line in sufficient numbers in the late 1990s. As we intend with all modernization efforts, the P-7A will be less manpower intensive and more economical to operate. The P-7A will provide significantly increased payload, greater range, and higher transit speed. Advance procurement funds are requested for FY 1991 with procurement to begin in FY 1992. We are also pressing ahead in P-3C modifications by requesting needed funding to meet an increasingly sophisticated submarine threat; however, affordability has reduced Update III kit procurement and delayed program completion until 1994.

We are continuing to procure modernization kits for the S-3B WSIP. The excellent operational effectiveness which the S-3B aircraft has recently demonstrated during its initial at-sea operations clearly points to the benefits of a successful modification program. With the important role the aircraft now plays in the AAW and ASUW roles in addition to its primary mission of ASW, the S-3B has become a true force multiplier. Unfortunately, affordability has reduced the rate of S-3B kit procurement and delayed program completion until 1996.

The revised FY 1990/91 budget defers the procurement of 18 SH-60F ASW helicopters to allow time to correct deficiencies discovered during follow-on test and evaluation. Timely correction of these deficiencies should result in a procurement profile which allows required replacement of the SH-3s as they reach the end of their service life. The SH-60B program is on track and performing well. Full funding in FY 1990 for six SH-60Bs will help fill inventory requirements on the LAMPS Mark III ships.

AIR DOMINANCE

Naval Aviation is working in conjunction with other warfare sponsors in developing an Anti-Air Warfare (AAW) Master Plan that will provide a fleet-wide assessment of force AAW capabilities vis-a-vis requirements into the early 21st Century. The purpose is to identify methods of making existing systems work best in coordinated operations and to outline RDT&E and procurement priorities for the next several years. In view of the Soviet's Naval Aviation developments at sea, the AAW Master Plan will provide a roadmap to meet the increasing threat.

The F-14D is key to Carrier Battle Groups achieving air dominance. Mounting new high performance engines, a state-of-the-art digital radar, and new digital avionics, it will pace the threat and provide continued outer air battle capability to the Carrier Battle Group. Navy anticipated achieving an all F-14D force by the year 2000 through a strategy including both new procurement and remanufacturing the F-14A to the F-14D configuration. The revised FY 1990 budget terminates the new production program but retains the remanufacture program. We anticipate a one-year delay in F-14D fleet introduction.

The Navy is working closely with the Air Force and its contractors in conceptualizing a carrier-based version of the Advanced Tactical Fighter (ATF) as a follow-on to the F-14D near the turn of the century. The Navy is fully committed to this development program.

The F/A-18 continues to fulfill its multimission requirements superbly, including fighter (self) escort, short to mid-range intercept, and F-14 augmentation in the outer air battle. The capability to perform strike and fighter missions allows the Carrier Battle Group Commander unparalleled flexibility in configuring the F/A-18 as battle situations change. The digital weapon system of the F/A-18C yields greater combat effectiveness by including the capability for AMRAAM and ASPJ. Development funding requested for the radar upgrade is absolutely essential.

The E-2C weapons system update program continues to be highly successful in meeting the evolving threat. The request for four E-2Cs in FY 1990 will continue to satisfy fleet inventory requirements; however, affordability has forced a one-year slip in the second phase of the update development program (UDP II). Wing cracks continue to impact readiness. Twenty-six of the 101 E-2C aircraft in inventory are grounded for wing cracks. Full funding of our modification account (APN-5), as requested, will keep the Navy's "get well" plan on track.

ELECTRONIC WARFARE

As the enemy gains electronic sophistication, so must the electronic combat systems supporting tactical air forces and carrier battle groups. The EA-6B remains the primary platform for suppression and degradation of enemy defense systems by tactical jamming and counter-target jamming support for battle groups and Marine Corps forces. Funding in FY 1988 and 1989 for 12 aircraft each year will satisfy near-term inventory requirements. Because of affordability, additional EA-6B procurement has been terminated. This will necessitate careful management of our assets until arrival of the Advanced Tactical

Surveillance (ATS) System. As a warfighting requirement, the EA-6B will be remanufactured into the Advanced Capability (ADVCAP) configuration starting in FY 1991. We are also requesting development funds for the Advanced Signal Receiver (ASR) as a top priority.

A top priority of battle group commanders is the accelerated modification of 16 ES-3 electronic surveillance aircraft from the existing S-3 inventory. The program continues to progress at an accelerated pace to replace the few remaining EA-3B aircraft. Any delays in this program will adversely impact fleet capability and readiness. ES-3 squadrons are scheduled to stand up in Guam and Rota, Spain in 1991.

Advanced Tactical Surveillance (ATS). FY 1990 includes our first request for ATS development funds. ATS is being developed to perform the battle management, surveillance, and multi-dimensional warfare missions currently accomplished by the E-2C, S-3A/B, EA-3B/ES-3B, and EA-6B. ATS is envisioned to be a common airframe/engine developed from a current derivative air vehicle, though the final decision has not been made on what platform will incorporate it. It will encompass a common baseline avionics architecture which allows the integration and exploitation of a multi-spectrum sensor suite, common signal/data processing hardware and software, standard DOD data bus structure and reconfigurable controls and displays. The baseline ATS will require, as a minimum, two major variants due to mission-specific sensors and weapons requirements (Battle Management/AEW and Battle Management/ASW), with common netting, C3, EW, and SIGINT capabilities.

Training. As Naval Aviation fields the most sophisticated and capable weapon systems in history, training for both the operator and maintainer becomes even more important. Training is a "force multiplier" which gives us the edge in readiness for combat.

Training includes flight hours, classrooms, training support equipment, facilities and targets, adversary aircraft, simulators, training devices and adequate Temporary Additional Duty (TAD) funding to accomplish available training. Technology now allows simulators which virtually replicate real world threats and our own weapon system capabilities. We are on the threshold of true mission rehearsal and a deployable trainer is in the near future. The initial training in the operation and maintenance of complex weapon systems is best and most economically conducted first in simulators. It is absolutely essential that training devices and simulators be funded in parallel with new aircraft systems and modifications and they arrive before the delivery of the first aircraft or modification, not after.

The T-45 Training System consists of the T-45A "Goshawk" jet trainer, state-of-the-art visual and instrument simulators, computer based training integration system (TIS), computer aided instructional devices, academics, courseware, and contractor logistics and maintenance support.

The first two flight test aircraft were accepted by the Navy in 1988 and were used for initial operational and developmental flight testing during November 1988. During this initial flight testing, deficiencies were discovered in lateral and longitudinal stability, engine response and total engine thrust, speed brake operation, and several areas of human factors. All deficiencies are correctable, and the Navy is working closely with the prime contractor (Douglas Aircraft) to resolve these problems in the most timely manner possible. A slip in initial operational capability (IOC) of nine months from the original IOC of September 1990 is likely, but no major impact on the ability to meet pilot training requirements is projected. FY 1990 procurement of the T-45 has been deferred until deficiencies are corrected.

Aircraft Modifications. The FY 1990 request is significantly scaled back to $601 million from the $932 million appropriated in FY 1989. This reduction will improve the balance between modification kit procurement (APN-5) and installation funding in the O&M,N request. However, modernization reflected in the APN-5 account is at the absolute minimum acceptable level.

AVIATION SUPPORT EQUIPMENT

Our request for support equipment in FY 1990/91 is essentially level with the amount appropriated last year. The appropriations provided from FY 1984 through FY 1988 have been dedicated to fully outfitting our deployable carriers. Full funding as requested in FY 1990 is needed to provide initial Consolidated Automated Support System (CASS) production, CV replenishments, required support equipment for aircraft procurement, and the replacement of obsolete equipment.

CASS is an automatic testing system for Navy weapon system electronics support. It consists of standard hardware and computer software to which functional modules are added to meet different testing requirements, such as communications, radar, and electronic warfare. Once designed, the modules can be quickly and inexpensively produced and replaced. Maintaining CASS development on schedule is essential for the support of the A-12 and all future aircraft and new common avionic systems. CASS offers significant savings in manpower, training, support equipment, operating cost, space, and combat readiness.

READINESS AND SUSTAINABILITY

The FY 1990/91 budget is balanced to sustain the high state of day-to-day readiness required by Naval Aviation tactical forces through prudent investments in training, personnel, and material support programs.

Flying Hours - An Imperative for Fleet Readiness. The standard readiness indicator for the flying hour program is the primary mission readiness (PMR) attained by warfighting units (TACAIR/ASW). For each type aircraft, a pilot needs to be trained in various mission skills--skills which must be continually renewed for proficiency. Through experience, we have determined the average number of hours per month required to achieve and maintain these skills. Our budget development process is designed to identify the required funding levels necessary to provide the flight hours to maintain crew readiness. The FY 1990 budget request is sufficient for us to achieve 85 percent of that level through flying and to gain an additional two percent PMR through the use of simulators. The planned 87 percent PMR represents the minimum required to achieve readiness, aviation safety goals and to address pilot retention concerns. We believe that further reductions below this flight activity level will result in a degradation to those essential elements of warfighting capability.

Air wings preparing for deployment and those already deployed must be given priority for flight time while those returning receive less with our current flying hour program. The average TACAIR/ASW crew flies 25 hours per month over the entire year. This reflects the absolute minimum for retention of critical combat flying skills. The opportunity to fly is also critical in the retention of aviators. Most aviators say that 30 or 40 hours per month in a Navy tactical aircraft is necessary to meet their flight combat requirements and to provide an incentive to stay in the Navy despite deployments and other hardships. Individual averages today are far below that level.

Airspace. Another separate, but related, issue is the availability of adequate Special Use Airspace to maintain Naval Aviation readiness. Special Use Airspace is essential for attaining acceptable flight crew proficiency across the full spectrum of warfare, for developing and evaluating airborne tactics, and for testing and evaluating advanced technology aircraft and weapon systems. Low observable and terrain hugging aircraft, high-speed missiles, and over-the-horizon standoff weapon systems and tactics are but a few examples of added capabilities that increase airspace and sea area requirements.

Increased emphasis on joint operations place additional demands on airspace size and frequency of use. Available airspace, though, is under increasing pressure from commercial air, economic, political and environmental sources. Each source is represented by special interest groups which compete with military interests. The Navy is faced with the dilemma of requiring increased airspace to support emerging capabilities, while current trends are reducing available areas and restricting their use. This places readiness at risk. We are working hard at solving the myriad of problems attendant, but I would much appreciate the Members' understanding of our dilemma.

Aircraft Material Readiness. While many factors, including personnel, training, general logistics support, spare parts, and depot rework funding, affect material readiness, the primary indicator used to measure aircraft material readiness is the Mission Capable (MC) rate. The MC rate goal is 73 percent, which was achieved in FY 1988. Funding in areas affecting MC rate decreases from FY 1987 to FY 1991. The result is expected to be a decline of about one percent per year in the MC rate from FY 1988 to FY 1991.

Aviation Spares. The FY 1990/91 aviation spares account has been pared to bare minimum requirements and represents our best efforts at a balanced approach within the limits of affordability. We plan to procure 100 percent of engine spare parts requirements which directly affect Mission Capable rates and 70 percent of an avionics system's repair parts which has direct affect on Full Mission Capable rates but does not affect Mission Capable Rates. As in recent years, reduced funding for spares will require intensified management efforts that include undesirable options of increased cannibalizations, additional "crossdecking" of assets, off-ship requisitions, and increases in maintenance man hours.

Shore Station Support. Naval air stations provide the environment critical to maintaining the readiness of Naval Aviation. Air stations, operated and maintained by a mixed military/civilian and contractor work force, must be adequately funded to provide a sufficient level of support for aircraft operations and maintenance. We continue to seek innovative ways to minimize shore station costs through functional consolidation, efficiency reviews and Circular A-76 studies. The current budget allocates the bare minimum for air station operations. Further budget reductions to Base Operations Support funds would have a dramatic negative impact on our ability to maintain air station operations at safe and efficient rates.

WEAPONS DEVELOPMENT/PROCUREMENT

Power projection is carrying the fight to the enemy and putting ordnance on target. Sufficient quantities of practice ordnance are essential to accomplishment of that objective. Skills must be maintained on a continuous basis during peacetime. The CINCs' number one concern is the shortage of weapons required to carry out their missions. Although increased weapons procurement in recent years has all but eliminated the requirement to cross-deck weapons on deploying combatants, we still have not filled the resupply pipeline and forward prepositioned inventories of several of the newer, more sophisticated weapons such as HARM, IIR MAVERICK, PHOENIX, and HARPOON. However, we believe the quantities reflected in the FYDP are an acceptable risk in this funding environment.

Several weapons are worthy of special mention because of their contribution to warfighting enhancements. We are proceeding with the development of the AIM-9R as a top priority. It features an improved capability in clutter and a significant counter - countermeasure capability. We are continuing the development of AAAM, AMRAAM, Standoff Land Attack Missile (SLAM) and the Advanced Interdiction Weapon System (AIWS). Our goal is to "neck down" the different types of weapons in the fleet.

The increased Congressional funding of $35.0 million in FY 1989 for sonobuoys will help meet inventory requirements and future consumption requirements for ASW training. The FY 1990/91 request has been reduced to the lowest prudent level. Even though expenditure rates may exceed FY 1990 procurement quantities, accumulated inventories will support the required ASW operational tempo in the near term.

The reduction in air-launched training ordnance mandated by fiscal constraints is somewhat offset by the increased request for MK-82 General Purpose Bombs which will permit continued use of live ordnance training. However, this level of funding is still at the absolute minimum to avoid erosion of war reserves and to maintain an acceptable level of ordnance delivery capability. The most optimistic future outlook rests on the early IOC (FY 1995) of the Advance Bomb Family (ABF).

SUMMARY

Sea power is essential to the nation and to national objectives. Naval Aviation unencumbered by basing debates and treaty limitations, adds dimensions to sea power that are not available from other means. Naval aircraft provide reach, flexibility, versatility, speed, and concentrated firepower. They are quickly reloadable. The revised FY 1990/91 budget emphasizes readiness, retention of experienced manpower, and force modernization which will allow Naval Aviation to continue meeting national commitments.

People must always remain our top priority. Our people ask for very little. They willingly deploy throughout the world, enduring six-month separations from their families and friends on a routine basis. They do so from a deep sense of commitment and love of country. We must return their commitment and devotion to duty with adequate pay and benefits, providing a secure financial environment for their families. This is the key element in protecting our national investment in a ready Navy.

We must likewise provide sufficient funds to maintain a balanced naval capability centered on 14 deployable Carrier Battle Groups. Our Carrier Battle Groups are the centerpiece of our naval capability because they represent the most effective and complete way to establish and maintain control of the seas. There is no substitute for them in peacetime or in war. In order to pace the emerging threat in the coming decade, we must introduce on schedule the technologies represented in new weapon systems, such as the A-12.

Naval Aviation makes extraordinary contributions to national security. The continued support of Congress in protecting our investment by providing measured real growth, coupled with the dedication of our courageous professional men and women in Naval Aviation, will ensure our strong contribution continues.

BIOGRAPHICAL SKETCH

VICE ADMIRAL RICHARD M. DUNLEAVY

Vice Admiral Richard M. Dunleavy, a Boston, Massachusetts native, and a 1955 graduate of Boston College, serves as the principal advisor to the Chief of Naval Operations for all Naval Aviation matters.

An Officer Candidate School graduate, he was designated as a Naval Flight Officer, and served with Heavy Attack Squadrons One, Three, and Seven, deploying aboard USS ENTERPRISE (CVN-65) with the latter. In September 1964, Vice Admiral Dunleavy joined the staff of Reconnaissance Attack Wing One. After attending the Naval War College, he was assigned to Attack Squadron Eighty-Five, where he flew combat missions in Southeast Asia. This tour was followed by assignment to Air Test and Evaluation Squadron Five.

He reported to Attack Squadron One Seventy-Six in June 1971 as Executive Officer, assuming command one year later. After commanding Attack Squadron One Twenty-Eight, he was assigned to the USS KITTY HAWK (CV-63). In June 1976, he joined the Chief of Naval Operations' staff. He was Commanding Officer of the USS PONCHATOULA (AO-148), and assumed command of USS CORAL SEA (CV-43) in December 1979.

Vice Admiral Dunleavy was promoted to flag rank in July 1981, and was selected as Commander, U. S. Naval Forces, Philippines. After further service in the office of the Chief of Naval Operations, where he managed the effort to procure the carriers Abraham Lincoln and George Washington, he became Commander, Carrier Group Four/Commander Striking Force Atlantic. He subsequently served as Commander, Naval Air Force, U.S. Atlantic Fleet from December 1986 until May 1989.

He has flown more than 15 types of aircraft. The Navy League has recognized Vice Admiral Dunleavy with the John Paul Jones award for leadership excellence. His military awards include a Distinguished Service Medal, three Legions of Merits, eight Air Medals and four Navy Commendation Medals.

Vice Admiral Dunleavy is married to Sibyl Evelyn Blair of Miami, Florida. They have four sons -- Sgt. Richard M., U.S. Air Force, Ensign Mark B., Matthew C. and David P. of Norfolk, Virginia.

STATEMENT OF LT. GEN. RONALD W. YATES

Senator **INOUYE**. General Yates.

General **YATES**. Sir, I will proceed with my comments.

Sir, I have distributed to the members of the committee a few charts, so if I could ask you to follow through and turn to the first Air Force chart.

DEDICATED AIR-TO-AIR AIRPLANES

The tactical air forces must be capable of performing a variety of missions for the battlefields of 1990 and those classical missions I have depicted on the first slide—dedicated air-to-air, dedicated air-to-surface, and multirole airplanes. We feel that the budget that the President has submitted provides a good balance with the dollars and, of course, in this constrained fiscal environment for the tactical aviation forces.

The dedicated air-to-air force in the Air Force are F–15C's and F–15D's and will be advanced tactical fighters. These are critical resources to us because without the dedicated air-to-air planes we cannot maintain air superiority, and the air superiority is what allows the rest of the tactical forces to function as we designed them.

Dedicated air-to-surface airplanes. We have already talked about the Air Force version of the Navy's A–12, and I will discuss that more in a few moments, and our current in-inventory airplanes, modified for close air support. Those are our dedicated air-to-surface airplanes.

Multirole airplanes are F–16's and F–15E's. These provide the theater commander with the flexibility to move that force of airplanes to wherever the tactical situation demands.

TACTICAL AIR FORCE MODERNIZATION—AIR SUPERIORITY

If I could ask you to turn to the next slide, first I am going to talk about those three classical missions in order. The first is air superiority. Seven of the thirty-five tactical air wings are dedicated to air superiority, which is 20 percent of the tactical air force.

The last dedicated air-to-air airplane that we bought was the F–15C and F–15D, and that procurement ended in fiscal year 1986. The advanced tactical fighter procurement will begin in fiscal year 1994. Now in fiscal year 1990 we will see the first flight of the prototype airplanes. We will be making a source selection to come down to one dedicated contractor team in December 1990, and full-scale development of the advanced tactical fighter starts in January 1991.

We will buy a total of seven wings of advanced tactical fighters, 750 airplanes. The amended President's budget that we are here to discuss today did significantly restructure the advanced tactical fighter program to reduce concurrency in the program and, as we did that, I will discuss how it will allow us to fully exploit the investment, the very considerable investment, that we have made in demonstration and validation.

We delayed the FSD first flight 6 months to June 1994. There is no delay in the start of full-scale development. I have already mentioned that FSD starts in January 1991. However, we have delayed the first flight, so the first flight will now occur 42 months after the start of full-scale development.

That gives us more time to fly the prototypes, more time to work the ground avionics and the airborne avionics test beds, and basically to mature the technology. In other words, that is how we are taking some of the concurrency out of the program and some of the risk. That will allow us to increase our total flight test months prior to making a production decision by about 20 percent over the previously submitted Reagan budget.

We will slip procurement 1 full year, from fiscal year 1993 to fiscal year 1994. By that time we will have flown the prototype airplane for 3½ years and will have 4 years of flight testing on the avionics in the flying test bed.

We reduced the first lot of airplanes. Not only do we delay them a year, but we reduced the first lot of airplanes from eight airplanes to four airplanes, again to take concurrency out of the program.

All of this, Senator D'Amato, addresses the issue you raised earlier about not intending to repeat historical patterns in this program. This program is substantially different from any we have done in the past.

Affordability is a prime concern of ours. Quantity has a quality all its own. If we are not able to afford 750 airplanes, then we do not have a fully effective combat force, so we are very cognizant of the costs and we are going to work it very hard.

You cannot leave air superiority without mentioning the AMRAAM missile, something that is key not only to increasing the lethality of our future airplanes but the current airplanes we have in our force, which will be with us well beyond the year 2000.

The AMRAAM program continues to be extraordinarily successful. Seventy-eight percent of the missiles we have shot to date, including the first one, have been successful. Fiscal year 1990 will see the first initial operational capability of AMRAAM's on the F–15. In 1991 we will see full-rate production with both the Navy and the Air Force.

DEDICATED AIR-TO-SURFACE AIRPLANES

If I could ask you to flip to the next slide, I would like to turn to dedicated air-to-surface airplanes, which are about 35 percent of the tactical air forces. The Navy's advanced tactical aircraft the Air Force will be buying is a follow-on to the F–111. We do not anticipate any major airframe or engine changes to the Navy A–12. There will be some avionics changes, some minor changes to adapt it to the Air Force mission, but no major changes to the airframe or engine.

In that regard, fiscal year 1990 for the Air Force advanced tactical fighter, while the schedules are classified, will be devoted to demonstration/validation for Air Force studies to reduce risk for Air Force-peculiar mods.

Close air support are the other dedicated airplanes that we have. We are going to support the Army with nine dedicated wings for the air-land battle doctrine. That is, 26 percent of our 35 tactical fighter wing forces will be dedicated to close air support airplanes.

The decision on the A–10 replacement has not yet been made by the Department of Defense. As gap-fillers there are some enhancements which have been provided for in the FYDP. There will be 146 block 30 F–16's which will be retrofit with advanced target handoff system, a digital terrain system, a Pave Penny laser spot seeker, 30mm gun pod carriage provisions, and improved hardening so that those airplanes will be much better able to perform the close air support mission.

Two hundred twenty-five A–10's will be retrofit with advanced target handoff systems and other mods. And then the night attack program to develop, test, and evaluate a FLIR-based operating system will be kicked off in this budget. The Army intends to fight a major portion of the battle at night. We intend to support them at night. The purpose of the night attack program is to develop the optimum FLIR to support the Army in the close air support environment.

MULTIROLE FORCES

If I could ask you to go to the next slide, please, that is slide 4. Multirole. These are the swing forces which the commander can move from one tactical area to another. It is about 45 percent of the tactical forces. The F–16's will be procured throughout the 5-year plan at 150 per year.

This will be our third multiyear procurement of F–16's—fiscal year 1990 through 1993. We estimate for this multiyear procurement 9.6 percent savings; $416 million we expect to save. Mr. Chairman, last year, while 9.6 is very close to 10 percent, which is what the language last year said we had to achieve, the language did say that we had to achieve that over the last contract.

Now the last contract was a multiyear contract. We are achieving 9.6 percent against what we would have to buy for a series of annual contracts. We will certainly not enter into a multiyear procurement without coming back and seeking relief from the requirement to save 10 percent over the last multiyear contract. We would have to do that through the President and I would hope that the committee would consider providing some language which would facilitate the next multiyear for the F–16.

There is one change in the budget. The Agile Falcon planform—in other words, the new wing—for the F–16 has been taken out of the President's budget. We will proceed with some avionics upgrades for older airplanes, but we do not intend to put a new wing on the F–16 at this time.

F–15E procurement was stopped after buying 36 airplanes each in 1990 and 1991. It was a painful decision for us. It is strictly a fiscal decision. We did not have the bucks to do it. That will buy a total of 200 airplanes that will provide minimum force structure in both Europe and the Pacific.

PREPARED STATEMENT

Finally, sir, my last chart is a summary. Our tactical air forces must be capable of performing a variety of missions in the 1990 battlefield. The President's budget preserves the essential modification of each of the three areas that I mentioned—dedicated air-to-air, dedicated air-to-surface, and flexible multirole forces. And we feel our amended budget provides the best use of available funding. It does meet our tactical airpower needs while conforming to the fiscal constraints.

Thank you, sir.

[The statement follows:]

STATEMENT OF LT. GEN. RONALD W. YATES

Mr. Chairman and Members of the Committee, I am pleased to appear before you to review the Air Force's Tactical Airpower activities for Fiscal Years 1990 and 1991.

Please note that the written statement I am providing today is based on the Bush budget.

The program outlined in this report is based on the United States Air Force Acquisition Program, which is designed to provide the systems and equipment needed by our aerospace forces to implement our basic military strategy of deterrence in the most efficient manner possible. We continue to emphasize people as the first asset to develop and support. Our remaining priorities for this budget are

- Modernize strategic forces
- Maintain a high level of readiness and sustainability
- Increase airlift capability
- Modernize tactical forces
- Increase the use of space in military operations

This program has been formulated against a background of political and technological change of unprecedented magnitude. Soviet statements and proposals show remarkable reversals from past Soviet words and actions. Yet these statements and proposals are not yet firmly rooted as the types of freedoms we experience every day in modern democracies, nor have the Soviets translated the rhetoric into visible military reductions. In addition, General Secretary Gorbachev, though extraordinarily successful to date, is vulnerable in his own country to the consequences of failure. Therefore, we must base our military planning, as well as our development and acquisition of new systems, on the current capabilities of the Soviets, not their proposals or our own tendency toward optimistic evaluation of their intentions.

In addition to the Soviet concern, our friends in Central America, in the Middle and Far East, in Africa and South America face challenges to their security that could result in a call for our assistance. In some countries of the world there is a bitter hostility toward the US, demonstrated by both words and actions in the form of terrorism. We must therefore be prepared to support our friends and protect our vital interests whenever they may be threatened. This demands the flexibility to participate throughout the spectrum of conflict, from low-intensity conflicts to strategic nuclear war. That flexibility can not be created in one year or one budget. It requires a solid, continuing balance of readiness, sustainability and modernization, which all apply to a sound underlying force structure.

The Air Force budget was painstakingly crafted to keep our aerospace forces on a stable, prudent course for ensuring US security, balancing current readiness and sustainability with future investment. The programs were chosen carefully to continue the modernization of existing force structure while using economical production rates and multiyear contracting to replace older systems. In our deliberations we sought a balance among required military capability, program priorities and budget realities. Our Air Force programs support the budget priorities described above and are key to maintaining a deterrent force.

TACTICAL AIR MODERNIZATION

We must remain capable of countering any conventional threat in a decisive, timely manner. Modernization of our tactical forces is being pursued through a number of programs. Given current budgetary constraints and to protect our combat readiness and sustainability while modernizing the force, we will draw down to 35 Tactical Fighter Wing Equivalents from 37. We will continue procuring the F-15E and F-16s, while developing the Advance Tactical Fighter and, with the Navy, the Advanced Tactical Aircraft. To maximize the capabilities of the force, the Low Altitude Navigation and Targeting Infrared System for Night (LANTIRN) is being deployed, the improved performance fighter engines will continue to be evaluated, and a variety of new munitions are being developed and procured.

Modernization of our E-3 Airborne Warning and Control System will continue its support of our tactical forces. Equally important, though, will be maintaining the E-3 as a flag ship of the nation. We must ensure it is survivable, and capable of meeting the changing threat both as a strategic and a tactical resource.

To maximize the capabilities of our tactical forces, a variety of new munitions are being developed and procured. These new munitions will arm our forces with several new and improved capabilities in air-to-air and air-to-surface roles. AMRAAM is our high performance air-to-air missile which will reduce vulnerability to our aircraft while attacking multiple enemy aircraft. Other air-launched tactical munitions include the Maverick air-to-surface missile, Tacit Rainbow emitter attack missile, HAVE NAP medium range precision guided standoff conventional missile, and HARM air-to-surface anti-radiation missile. Our tactical missiles increase combat effectiveness and aircrew survivability.

The activities I've presented here today are part of a carefully balanced program. Sustaining efficient production and economical production rates can maintain the balance if stable funding backs it. We are committed to support these activities, and ask for your support.

Thank you, Mr. Chairman, for the opportunity to make this statement. I will be happy to answer your questions.

BIOGRAPHICAL SKETCH

Lieutenant General Ronald W. Yates is principal deputy assistant secretary of the Air Force for acquisition, Washington, DC

General Yates was born Oct 3, 1938, in Memphis, TN, and graduated from Hillsboro High School in Nashville, TN, in 1956. He earned a bachelor of science degree in military science from the U.S. Air Force Academy in 1960 and a master of science degree in systems management from the University of Southern California in 1970. The general completed Squadron Officer School in 1964, Air Comand and Staff College in 1971, Defense Systems Management College in 1973 and the Industrial College of the Armed Forces in 1977.

Upon graduation from the academy in June 1960, he was commissioned as a second lieutenant. The general received his wings in September 1961 after completing primary pilot training at Spence Air Base, GA, and basic pilot training at Webb Air Force Base, TX. He then completed F-102 combat crew training at Perrin Air Force Base, TX, and was assigned to the 68th Fighter-Interceptor Squadron, Itazuke Air Base, Japan. In June 1964 he transferred to the 509th Fighter-Interceptor Squadron, Clark Air Base, Philippines. During this tour of duty, he flew 100 combat missions in F-102s in Southeast Asia.

Returning to the United States in June 1966, the general was assigned as a student at the Aerospace Research Pilot School, Edwards Air Force Base, CA. He remained at the school as a test pilot and chief of the Aerospace Research Pilot Branch until December 1970. During this period he flew a wide variety of fighter aircraft modified for test purposes. As project pilot in the NF-104 rocket-powered research plane, he made numerous flights to altitudes exceeding 100,000 feet.

From January 1971 to 1973 General Yates was assigned to Headquaters Air Force Systems Command, Andrews Air Force Base, MD, as director of senior officer management. He then was selected to attend the Defense Systems Management College. Upon graduation in May 1973, he was assigned as director of development test, A-10 System Program Office, Aeronautical Systems Division, at Wright-Patterson Air Force Base, OH. The general graduated from the Industrial College of the Armed Forces in June 1977. He then was assigned as the F-16 program element manager, Office of the Deputy Chief of Staff for Research and Development, Headquarters U.S. Air Force, Washington, DC.

In March 1979 General Yates returned to Aeronautical Systems Division, where he served successively as deputy F-15 system program director and F-15 program director. He became commander of the 4950th Test Wing, also at Wright-Patterson Air Force Base, in July 1981. In April 1983 he was appointed as the Aeronautical Systems Division director for tactical systems. The general became Aeronautical Systems Divison's system program director for the F-16 multi-national fighter in August 1983. The F-16 program was the largest aircraft acquisition program in the history of the Department of Defense. Under General Yates' leadership, the F-16 System Program Office was awarded the Secretary of Defense Superior Management Award for 1984. General Yates also received the Air Force Association's Distinguished Award for Management for 1986.

From July 1986 to January 1989 he was director, tactical programs, Office of the Assistant Secretary of the Air Force for Acquisition, Washington, DC. The general assumed his present position in February 1989.

General Yates is a command pilot with more than 3,500 flying hours. His military decorations and awards include the Distinguished Service Medal, Legion of Merit with one oak leaf cluster, Distinguished Flying Cross, Meritorious Service Medal with two oak leaf clusters, Air Medal with three oak leaf clusters, and Air Force Commendation Medal with one oak leaf cluster.

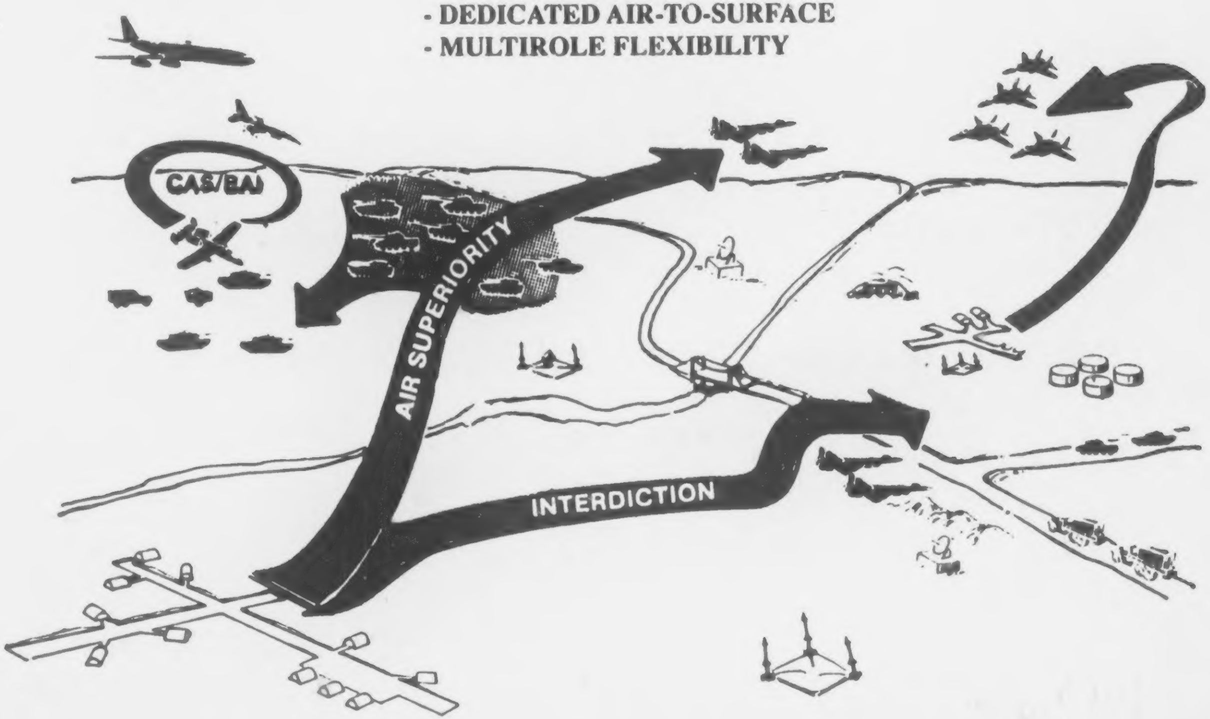
He was promoted to lieutenant general on March 3, 1989.

General Yates is married to the former Constance Siegrist of Nashville. They have three children: Wade, Dawn and Kristen.

TACTICAL AIRPOWER

VARIED MISSIONS REQUIRE VARIED CAPABILITIES:

- DEDICATED AIR-TO-AIR
- DEDICATED AIR-TO-SURFACE
- MULTIROLE FLEXIBILITY


CAS/BAI
AIR SUPERIORITY
INTERDICTION

TACTICAL AIR FORCE MODERNIZATION

AIR SUPERIORITY

- APPROXIMATELY 20% OF TAF FLEET DEDICATED AIR SUPERIORITY
- F-15C/D PROCUREMENT ENDED IN FY86
- ADVANCED TACTICAL FIGHTER (ATF) PROCUREMENT BEGINS IN FY94
  - TOTAL BUY OF 750 AIRCRAFT (7 WINGS)
  - AMENDED PRESIDENTS BUDGET RESTRUCTURED PROGRAM
    - DELAY FSD FIRST FLIGHT 6 MONTHS TO JUN 94
    - EXTEND FSD COMPLETION AND INCREASE DT&E/IOT&E
    - SLIP PROCUREMENT 1 FULL YEAR (FY93 TO FY94)
    - REDUCE LOT 1 BUY FROM 8 TO 4 AIRCRAFT
  - AFFORDABILITY REMAINS A PRIMARY PROGRAM CONSIDERATION
- AMRAAM PROCUREMENT PROVIDES ESSENTIAL MODERNIZATION THROUGH BEYOND VISUAL RANGE FORCE MULTIPLIER

TACTICAL AIR FORCE MODERNIZATION

MULTIROLE MODERNIZATION

- APPROXIMATELY 45% OF TAF FLEET IDENTIFIED FOR MULTIROLE
- SWING-ROLE VERSATILITY/AFFORDABILITY IMPORTANT IN FISCALLY CONSTRAINED BUDGET
- F-16 PROCUREMENT CONTINUES AT 150/YEAR
  - THIRD MULTIYEAR PROCUREMENT (MYPIII) FY 90-93
    - 9.6% SAVINGS ESTIMATED OVER ANNUAL BUYS ($416.6M)
  - FORCE STRUCTURE TO MODERNIZE ACTIVE & RESERVE FORCES (REPLACE F-4s)
  - AGILE FALCON (NEW PLANFORM) CANCELLED
- F-15E PROCUREMENT STOPPED AFTER 36 EACH IN IN FY 90/91
  - FISCALLY CONSTRAINED AT 200 AIRCRAFT
  - MINIMUM STRUCTURE IN BOTH EUROPE AND PACIFIC

TACTICAL AIR FORCE MODERNIZATION
AIR TO SURFACE

- APPROXIMATELY 35% OF TAF FLEET DEDICATED AIR TO SURFACE

- DEEP INTERDICTION
  - ADVANCED TACTICAL AIRCRAFT (ATA) BEING PROCURED AS FOLLOW-ON TO F-111

- CLOSE AIR SUPPORT
  - SUPPORT ARMY AIRLAND BATTLE DOCTRINE OF THE 1990s WITH 9 DEDICATED WINGS
  - DECISION ON A-10 REPLACEMENT NOT YET FINALIZED
  - INTERIM ENHANCEMENTS PROVIDED IN FYDP
    - 146 BLOCK 30 F-16 RETROFIT
    - 225 A-10 RETROFIT
    - NIGHT ATTACK PROGRAM TO DEVELOP/TEST/ EVALUATE FLIR-BASED NIGHT OPERATING SYSTEMS

SUMMARY

- VARIED MISSIONS REQUIRED VARIED CAPABILITIES
- AMENDED PRESIDENT'S BUDGET PROVIDES ESSENTIAL MODERNIZATION
  - -- DEDICATED AIR-TO-AIR
  - -- DEDICATED AIR-TO-SURFACE
  - -- FLEXIBLE MULTIROLE FORCE
- MEETS USAF TACTICAL NEEDS IN FISCALLY CONSTRAINED ENVIRONMENT

Statement of Lt. Gen. Charles H. Pitman

Senator **Inouye**. Thank you, General. General Pitman?

General **Pitman**. Mr. Chairman, I also welcome my first opportunity to appear before your committee as an integral part of naval aviation. I believe most of my remarks are covered in the opening statement which has been entered into the record.

PREPARED STATEMENT

We comprise about 27 percent of naval aviation, so I will stand with Admiral Dunleavy and I am ready to answer any questions you might have, sir.

[The statement follows:]

STATEMENT OF LT. GEN. CHARLES H. PITMAN

Mr. Chairman; Distinguished Members of the Subcommittee:

I appreciate this opportunity to update you on the status of Marine aviation and present our plans for aircraft procurement in fiscal years 1990 and 1991. We are well aware that much of the success your Marine Corps now enjoys is directly attributable to the continuing support of Congress, and we are committed to providing you, and our Nation, the most combat-capable force that we can within the funding allocated. My report to you today will discuss Marine aviation, how we performed in 1988, what programs we are proposing for your consideration in the Budget before you, and a brief overview of our future warfighting requirements.

Your Marine Corps has traditionally been characterized as "lean and mean", and has prided itself on its ability to use allocated resources effectively. Since its birth in 1912, Marine aviation has been a part of this tradition. We are constantly striving to ensure that our aircraft training, readiness, and modernization programs conform to this proven principle which has served us so well.

1988 IN REVIEW

Last year, aviation safety was a major success story for the Marine Corps. Marine aviation enjoyed its lowest accident rate in history--2.68 class A accidents per 100,000 flight hours. Every Marine can take pride in the part their uncompromising vigilance contributed to the aviation safety record. The savings to our nation in material and lives is noteworthy.

The CY-88 safety record is a direct reflection of the attention to detail in planning and day-to-day operations, and the return on your investment in modern state-of-the-art systems. In 1988 we flew 350,000 tactical flight hours; had a 76.5% mission-capable readiness across all aircraft communities; participated in over fifteen major live-fire exercises in such places as Twentynine Palms, CA, the Philippines, and Australia; had combined operations with over twenty countries; and global deployments from the Persian Gulf to northern Norway.

The quality of our aircrew, maintenance, and support personnel has never been better. We have also realigned our personnel structure as a part of the Marine Corps' 2,900-man end-strength reduction. We stood down an Aircraft Group Headquarters (MAG-15) in Iwakuni, Japan, incorporating its squadrons and support personnel into the other Iwakuni-based group, MAG-12. We reorganized our Marine Wing Support Groups, and our HAWK Missile Battalions, reducing the number of personnel and moving some of the heavy equipment into the Reserves. Thus, we entered 1989 with a leaner but safer, more capable force.

FY90/91 BUDGET AND THE AVIATION PLAN

Marine aviation continues to improve its capability to support Marine Air-Ground Task Force (MAGTF) combat requirements. These requirements are drawn from our expeditionary role in support of the Amphibious Strategy and as the nation's premier force in readiness.

Marine Corps planning has undergone considerable revision, and so has the assessment process by which Marine aviation requirements are developed. The process begins at the Marine

Corps Combat Development Command (MCCDC) at Quantico, where Marine Corps doctrine and planning has been centralized. Using inputs from CINCS and FMF commanders, MCCDC planners develop the MAGTF Master Plan (MMP) which contains a prioritized list of capabilities to meet mission requirements for all levels of conflict. Subordinate plans which identify changes in doctrine, organization, training, equipment, and facilities necessary to satisfy the capabilities, are developed for each of the four MAGTF elements (Command, Aviation, Ground, and Combat Service Support). The Aviation Combat Element subordinate plan is called the Marine Aviation Combat Plan (MACP).

Aviation planners at Headquarters Marine Corps assess the MACP requirements and apply Defense Guidance, manpower limitations, support requirements, and studies to develop constrained requirements which are incorporated into the Marine Aviation Plan (AVPLAN).

The AVPLAN ensures that Marine aviation remains responsive to MAGTF warfighting requirements and procures equipment which increases combat efficiency across all aviation communities. The range of our efforts is far-reaching. In FY90/91, the Marine aviation programs in the budget request reflect the movement toward greater expeditionary capability, night all-weather operations in a high threat missile, laser, and chemical environment, and a greater heavy lift capability while maintaining effective command and control. All aviation force structure decisions, doctrinal changes, tactical development, training programs and technology decisions are driven by the fundamental question--how will the change add to the Marine Corps' combat capability?

Programs requested in the FY90/91 budget reflect an assessment of their contribution to these objectives and to the six functions of Marine aviation--anti-air warfare, offensive air support, assault support, aerial reconnaissance, electronic warfare, and command and control of aircraft and missiles--as they support MAGTF warfighting requirements. I would like to briefly recap what each of these functions provides for the MAGTF commander.

Anti-air warfare provides the air superiority over the battlefield that is essential to successful operations. The F/A-18 aircraft and the ground-based HAWK and Stinger missile systems are employed as an integrated air defense system designed to destroy enemy air and missile threats.

Offensive air support delivers firepower against enemy forces for the destruction, neutralization, or interdiction of installations, equipment, and personnel. The A-6E, AV-8B, and F/A-18 provide the MAGTF commander with the heavy firepower lacking in the light, expeditionary ground combat element.

Assault support provides mobility, close in fire support, and logistic support for the MAGTF. Our four types of helicopters--heavy lift (CH-53), medium lift (CH-46), attack (AH-1W), and utility (UH-1N)--provide mobility with which to apply force and the logistical support to sustain the effort. Attack helicopters provide close in fire support, and utility helicopters act as command and control and medical evacuation aircraft. The assault support force is rounded out by KC-130s which provide aerial refueling and other assault support missions.

Aerial reconnaissance and electronic warfare provide the commander with vital combat tactical and strategic information. The RF-4B is our tactical photographic reconnaissance aircraft and the EA-6B provides electronic information as well as the ability to jam enemy radars and communications. Plans call for future versions of the two-seat F/A-18D to replace the aging RF-4B. The OV-10 provides visual reconnaissance as well as the ability to act as an airborne Forward Air Controller in a low-intensity conflict.

The control of aircraft and missiles is provided by the Marine Air Command and Control System, which ties the other five functions together into a single, coordinated structure for the force commander.

Technology is now available that gives Marine Corps rotary wing and fixed wing aircraft the capability to overcome many of the obstacles posed by night and adverse weather--permitting aviation support for around-the-clock MAGTF operations. The AV-8B and F/A-18 Night Attack Systems, AH-1W Night Targeting System, CH-53E Night Vision System, and the OV-10D+ Night Observation System reflect our commitment to this capability.

Advanced technology is being introduced only where there is an absolute assurance of increased reliability and maintainability in austere expeditionary combat environments. The Marine Corps must modernize its aviation force to field one that is completely capable of operating in an expeditionary environment. We have capitalized on revolutionary concepts such as Vertical/Short Takeoff and Landing (V/STOL). Where possible, we will exploit these concepts in developing multi-mission expeditionary-capable variants, such as an Attack/Observation aircraft (VMAO) and an Advanced Short Takeoff and Vertical Landing aircraft (ASTOVL), to replace other aircraft and fulfill our warfighting needs well into the next century.

V/STOL is a concept critical to providing the mobility and support required on tomorrow's battlefield. Studies and exercises have shown that reliance on the fixed air base requires an unacceptable drain on manpower for security and provides a lucrative target that can easily be rendered unusable to traditional aircraft. All too often, traditional airfields are too far to the rear, causing delays in responsiveness to ground combat element support requirements.

As we approach the year 2000, we hope to reduce the number of different aircraft type/model/series (TMS) in the Marine Corps' inventory. The goal is to decrease the number of people required to support our weapon systems and simultaneously increase mission effectiveness in terms of aircrew and aircraft performance. Done properly, we can improve the potential for victory on the battlefield while reducing the cost of our combat-ready force.

RESERVE AVIATION

Marine Reserve aviation exists to augment and reinforce the active aviation forces in the event of mobilization, and to serve as the nucleus of a Fourth Marine Aircraft Wing.

As the active Marine aviation forces are modernized and reduced in TMS, the same efforts are being applied to the Reserves. The modernization of the 4th Marine Aircraft Wing is the subject of a comprehensive Marine aviation review.

The Reserve F-4S squadrons are beginning their transition to the F/A-18 and the first squadron will be completely equipped by September 1989. The aggressor squadron in Yuma, Arizona received F-5s in April 1989 as a replacement for their Israeli F-21 KFIRs.

Thanks to your support, the Marine Corps continues to receive new KC-130Ts for the Reserve units at Glenview, Illinois and Newburgh, New York.

The fundamental goal in the achievement of the total force concept is Reserve aircraft and system commonality with the active forces. Budgetary constraints are slowing down efforts to modernize our Reserve aviation assets as quickly as we had anticipated.

ROTARY WING MODERNIZATION

ASSAULT SUPPORT. The FY-90/91 amended budget requests a CH-53/UH-60 mixture to supplant the MV-22. We are currently assessing how this mixture and other possible options can alleviate our medium assault support shortfall. Moreover, we must ensure that the Marine Corps has a viable warfighting capability into the 21st century.

CH-53E. The CH-53E is the Marine Corps' only heavy-lift support helicopter. The CH-53E provides the ground commander the operational flexibility he needs to reposition artillery and light armored vehicles (LAV's), to recover heavy equipment and aircraft, and to deliver the large quantities of supplies to wherever they are needed on the battlefield.

We currently have two CH-53E squadrons operating at New River, North Carolina and two at Tustin, California. Equipped with 12 aircraft each, these squadrons support continuous deployments in the Mediterranean and the western Pacific, FMF and JCS exercises, and both ground combat and aircrew training. Fiscal year 1989 procurement is the last year of a very successful four-year multi-year procurement which saved an estimated $98M. This procurement plus 23 planned for FY90 will bring our total to 125 aircraft.

AH-1W COBRA. The AH-1W is the Marine Corps' attack helicopter. It is a significant improvement over the AH-1T weapons system in operating capability. The AH-1W fulfills the mission requirement to provide enroute protection of assault helicopters. Additionally, it is used for landing zone fire suppression, close-in fire support, destruction of enemy armor, and defense against enemy attack helicopters.

The ongoing modification program which converts AH-1Ts to AH-1Ws and our previous procurement of 78 aircraft will bring our active force total to 115 aircraft organized into one training and six tactical squadrons. The Reserve force, however, is flying the older model, Vietnam-era, AH-1J helicopter. The AH-1J does not have anti-armor or point-target weapon systems and is extremely limited in night-fighting capability. Our plans include AH-1Ws for the Reserve force. Procurement has not been possible because of budgetary constraints.

The Night Targeting System is a U.S. and Government of Israel joint RDT&E program which will greatly enhance the AH-1W night-warfighting capability. It is on schedule and we expect first deliveries in FY93. The Night Targeting System will enable aircrew to locate, designate, and fire on targets at night with their anti-armor weapons, HELLFIRE and TOW missiles, 20MM gun and 2.75 rockets.

FIXED WING

Marine Corps fixed wing aviation is also the subject of modernization plans. As with rotary wing aviation, the emphasis is on reducing the number of aircraft TMS and increasing our warfighting capabilities. By late FY95, we hope to see the Reserve force equipped with the same types of tactical jet aircraft as the active forces.

F/A-18 HORNET. The Hornet fulfills both our air-to-air and air-to-ground mission requirements and can be operated from conventional or expeditionary airfields or from aircraft carriers. The F/A-18 incorporates state-of-the-art technology such as digital fly-by-wire flight controls, multi-mode radar, and use of lightweight composites to enhance the combat capability and flexibility of the aircraft. We have plans to upgrade it to meet our tactical reconnaissance missions and replace other TMS aircraft.

The F/A-18 provides a modern offensive and defensive anti-air capability to the MAGTF. Advanced avionics allow the Hornet pilot to accurately navigate, to strike enemy ground targets with the latest array of air-to-ground ordnance, and to detect and destroy enemy aircraft. The Hornet's versatility makes it deployable, sustainable, and effective across the spectrum of conflict. Increased operational reliability has improved the F/A-18 sortie generation rates while superior aerodynamic design, maintainability, and multi-mission capability make it particularly well-suited to the needs of the MAGTF in an austere expeditionary environment.

The newer and latest version of the F/A-18, the F/A-18C, is currently being introduced into our three fighter/attack squadrons in Hawaii. If the currently planned procurement continues, we anticipate having an all-F/A-18 fighter/attack force by late 1990s.

AV-8B HARRIER. The AV-8B Harrier will be the keystone of the Marine Corps' light attack forces well into the 21st century. It is the primary aircraft for providing critical, timely close air support to the ground commander. The AV-8B is an extremely effective and efficient aircraft in this role because of its modernized weapon systems, combat radius, and basing flexibility. The Harrier's ability to operate from roads, ships, grass fields, or prepared airstrips permits the quick response needed by the ground commander--bombs on target within 20 minutes after request.

An expeditionary force like a MAGTF is relatively "light" in organic heavy artillery and tanks, and must heavily rely on its tactical aircraft to provide the required fire support. The V/STOL-capable AV-8B is well-suited for providing dedicated close air support to Marine ground forces. The AV-8B has shown its performance and versatility around the globe in all types of conditions.

The Marine Corps active force will have an all-AV-8B light attack force by early 1992 following the conversion of VMA-214, the last active A-4M squadron. The AV-8B community has taken the lead in the development and fielding of night vision devices and compatible cockpit lighting for fixed wing aircraft. The first AV-8B night attack aircraft will be delivered to MAG-13 in Yuma, Arizona in September 1989.

The Marine Corps requirement is 323 aircraft to support the Force (8 squadrons X 20 A/C = 160 plus pipeline, attrition, and a training squadron) through year 2006. The present multi-year procurement contract--24 aircraft per year for three years--will bring our total procurement to 276 aircraft.

ALL WEATHER ATTACK. The venerable A-6E presently fills our all-weather attack requirement, but a replacement is clearly in order. Until recently, the A-12 has been the only viable alternative for the A-6E replacement, and Marine participation in the program was necessary to meet MAGTF all-weather attack requirements. Present fiscal constraints and the questionable expeditionary utility of the A-12 have necessitated a re-examination of our earlier position. Therefore, the Marine Corps is looking at the F/A-18D to supplant the A-6E. Essential modifications are planned to upgrade the radar and give it an all-weather attack capability. An F/A-18D with an all-weather attack capability would significantly reduce the TMS in our force and provide a lower-cost alternative to the A-12.

MARINE AIR COMMAND AND CONTROL

The Marine Air Command and Control System coordinates all of the functions of Marine aviation. It provides the commander with the means to integrate all of the other functions of Marine Aviation to fulfill the requirement for continuous aviation support. The Marine Air Command and Control System modernization is well underway.

MATCALS. The Marine Air Traffic Control and Landing System (MATCALS) is a tactical air traffic control program designed to replace the precision/surveillance radars and operating shelters of the Marine Air Traffic Control Squadrons. This system will replace the AN/TSQ-18 equipment developed in the late 1950's and will provide a highly automated, software-intensive, air traffic control system designed to increase aircraft landing rates and flight safety. The first of 17 systems was delivered to the Fleet in 1986 and Initial Operational Capability (IOC) is scheduled for 1990.

TACTICAL AIR CONTROL MODULE. The Tactical Air Control Module (TAOM) AN/TYQ-23 is a transportable, modularized, software-intensive, automated air command and control system. It is capable of controlling and coordinating the employment of a full range of air defense weapons, interceptors and surface-to-air missiles in support of the MAGTF. The AN/TYQ-23 command and control system is engineered to provide a modular operational capability in support of Marine Expeditionary Brigade (MEB) and Marine Expeditionary Force (MEF)- sized operational units and associated deployments.

GROUND-BASED AIR DEFENSE

Further warfighting enhancement is provided through reorganization of our ground-based air defense weapons systems, HAWK and Stinger. This realignment effort provides a balance of close-air and medium-range firepower for all levels of MAGTF composition. Procurement of both HAWK and Stinger are joint ventures with the Army through cost-effective multi-year procurement (MYP) programs.

The HAWK expansion and improvement plan includes the phased activation of the 1st Light Anti Aircraft Missile (LAAM) Battalion in III MEF. The ultimate goal is three active HAWK battalions of two "square" batteries each. Fourth LAAM Battalion in the Reserve force will grow to four "square"-configured batteries.

The Low Altitude Air Defense (LAAD) expansion plan reflects the reorganization of Forward Area Air Defense Batteries (FAAD) into LAAD Battalions. A dedicated LAAD Btry of 45 Stinger teams is available for each MEB, while the 90 Stinger teams of the active force LAAD Battalion support the MEF. In the near term, the reserve 4th FAAD Btry will expand into battalion organization. Future plans also call for the creation of two additional firing batteries in the 4th LAAD Battalion structure which will result in 180 Stinger teams in the Reserve force.

READINESS AND SUSTAINABILITY

If our aircrews are to be effective in battle, they must train as they would fight. Our flight hour program has allowed our aircrews to attain and maintain proficiency. It is currently funded at the minimum level required to continue their proficiency. Your support in this area is essential if we are to maintain an effective level of readiness.

Last year we reported that our inventory of air-launched ordnance was below the level necessary for training readiness and sustainability. This situation has not changed, nor is it likely to improve in the near term. The future inventory of air-launched weapons will be dependent on adequate funding.

CONCLUSION

In this year's posture statement I have focused on modernization programs. I feel a strong need at this critical time in defense budgeting to stress Marine aviation's number one requirement--a sound and consistent investment in the future of Marine aviation. The changing nature of future battlefields and the need for the right mix of people, equipment, and tactics are critical to our success. Our Marines at the Combat Development Command in Quantico, Virginia, and at Marine Air Weapons Training Squadron-1 in Yuma, Arizona, work hard to develop the equipment, tactics, and training we need to ensure that we are not surprised on the battlefield.

We in Marine aviation are very appreciative of the efforts of the American people and Congress in support of our programs. We have worked hard to build an expeditionary force-in-being second to none, ready on a moment's notice to deploy, sustain operations, and fight and win on any battlefield in the world over the full spectrum of conflict.

Investments in force structure sustainability and readiness have paid off. Our training and readiness, war stocks, and people programs have resulted in an aviation force that is lean, tough, fit, and capable. Now is not the time to let up. With your support for our programs we will remain this nation's most efficient and effective expeditionary warfighting force.

BIOGRAPHICAL SKETCH

Lieutenant General Charles H. Pitman is the Deputy Chief of Staff for Aviation, Headquarters Marine Corps, Washington, D.C.

Born in Chicago, Illinois on October 20, 1935, General Pitman enlisted in the Naval Reserve in October 1952, and subsequently enlisted in the Marine Corps. Entering flight training as a Naval Aviation Cadet in 1954, he received his wings in August 1955, and joined Marine Helicopter Transport Squadron 363, Santa Ana, California. The following January, he deployed to the Pacific Proving Grounds, where he served for seven months aboard the USS BADOENG STRAIT (CVE-116).

Returning to the United States in September 1956, he was transferred to the Marine Corps Auxillary Air Station, Mojave, California, where he performed duties as airfield operations officer, search and rescue pilot and Provost Marshal. In January 1958, he returned to Pensacola for jet transition. Upon completion, he was assigned to the Multi-Engine Training Group as a flight instructor. He was later assigned as officer-in-charge, Third Cadet Battalion, U.S. Naval School, Preflight.

Following his promotion to captain in January 1960, General Pitman attended Photographic Reconnaissance School, then transferred to El Toro, California, where he was assigned to Marine Composite Reconnaissance Squadron 3. In November 1962, he deployed to VMCJ-1, flying the RF-8 and EF-10 on reconnaissance missions throughout the Far East.

Returning from overseas in November 1963, he joined VMCJ-2 at Cherry Point, North Carolina. A year later, he was assigned as Aide-de-Camp to the Commanding General, 2d Marine Aircraft Wing.

He was promoted to major in 1966, and reported to Marine Medium Helicopter Squadron 261 at New River, N.C., for duty as operations officer and then executive officer, flying the CH-46. Leaving in November 1966 for Vietnam, he served initially as maintenance and later as operations officer in HMM-265 at Marble Mountain, Phu Bai and Khe Sahn.

He transferred to Washington, D.C., in February 1968, for duty as a weapons systems analyst in the Office of the Chief of Naval Operations (OP-05W), where his assignments involved evaluation of tactical air capabilities, both U.S. and foreign. While assigned to OPNAV, he returned to Vietnam in October and November 1968 to evaluate several new airborne detection systems.

In January 1970, he attended the Armed Forces Staff College. Graduating in June, he transitioned to the UH-1, and attended the Army's Cobra School. By then, a lieutenant colonel, he returned to Vietnam, where he commanded Headquarters and Maintenance Squadron, flying UH-1s and CH46s. While transitioning to the CH-53, he was wounded while flying in Laos as part of Operation LAM SON 719. After being stabilized at Kuhe Hospital, Okinawa, he was evacuated to the Naval Medical Center, Bethesda, Maryland.

After recovering, he assumed command of Marine Air Reserve Training Detachment, New Orleans, in July 1971, again flying the CH-46. He held this assignment until leaving to attend the Air War College in June 1973. In conjunction with this assignment, he completed his B.S. degree in Business Administration at Troy State.

Transferred to Headquarters Marine Corps in May 1974, he served two years as Aviation's Program Coordinator. After being promoted to colonel in October 1976, he served two years with the Secretary of the Navy's Office of Program Appraisal.

General Pitman transferred to Okinawa in July 1978, where he assumed command of Marine Aircraft Group 36. The following year, he returned to Washington where he was assigned as Marine Corps Aide to the Secretary of the Navy, and later as the Marine Corps Member, Chairman's Staff Group, Office of the Chairman of the Joint Chiefs of Staff, as his advisor on the Middle East, Africa, South/Central America, Counterterrorism and the Rapid Deployment Joint Task Force.

In June 1981, General Pitman assumed duty as Commanding Officer, Marine Aviation Training Support Group, Pensacola, Florida. While serving in this capacity, he was selected for promotion to brigadier general. He was advanced to that grade on May 11, 1982 and assigned duty as the Assistant Chief of Staff, C-5, ROK/U.S. Combined Forces Command in Seoul, Korea.

In August 1984, he returned to the 3d Marine Aircraft Wing, MCAS El Toro, California, where he served as Assistant Wing Commander until advanced to major general in April 1985. He then proceeded to Okinawa, Japan, where he commanded the 1st Marine Aircraft Wing from June 12, 1985 until his transfer to Headquarters, Marine Corps on Sept. 9, 1987. He then served as Assistant Deputy Chief of Staff for Aviation until assuming his present position on May 1, 1988. General Pitman was advanced to lieutenant general on July 7, 1988.

His personal decorations include: the Silver Star Medal; Defense Superior Service Medal with bronze oak leaf cluster in lieu of a second award; Legion of Merit; Distinguished Flying Cross with gold stars in lieu of second, third and fourth awards; Bronze Star Medal with Combat "V"; Purple Heart; Defense Meritorious Service Medal; Air Medal with gold Numeral 3 and bronze Numeral 62; Navy Commendation Medal with Combat "V"; the Vietnamese Cross of Gallantry with silver star; and the Korean Order of National Security Merit, Cheonsu Medal.

Lieutenant General Pitman is married to the former Shaunee Smith of Springfield, Colorado. They have two sons, two daughters and three grandchildren, residing in Virginia, Florida and Alabama.

(Revised July 8, 1988 HQMC)

REPLACEMENT OF A-6

Senator INOUYE. Thank you, General.

Admiral, the revised budget makes major changes in the tactical aircraft programs. This may not be one of those good questions to ask, but what are your priorities, considering the following—the A-12, the advanced tactical fighter, the A-6G, and procurement of the F-14D's, the new F-14D's?

Admiral DUNLEAVY. Senator, with all due respect you put them in the right order by affordability and what we really need. We need something to replace the A-6 in the mid-1990's, and that is where the A-12 comes in. To replace the F-14 in the year 2000 and beyond we are working very, very hard with the Air Force to come up with a good Navy airplane, the ATF.

The F-14D is a remarkable aircraft. We would love to have it, but at the present time we flat cannot afford it. It is an affordability problem, and that is a hard question.

F-14D FLYAWAY COST

Senator INOUYE. Using the affordability measure, how will the F-14D flyaway cost compare with its successor?

Admiral DUNLEAVY. Senator, I will have to take that one for the record.

[The information follows:]

F-14D FIGHTER AIRCRAFT

Assuming a total procurement of 400 F-14D remanufactured aircraft and no new production after FY-89, the average recurring unit flyaway cost of the F-14D(R) is $26.9M.

A-12 PROGRAM

Senator INOUYE. Do you believe that the A-12 program will stay on schedule and within cost projections?

Admiral DUNLEAVY. Based on my experience in the past 12 to 18 months being briefed by both the Naval Air Systems Command and McDonnell Douglas and General Dynamics, what I am seeing and hearing, I am confident we will come in on time at cost.

DELAYED DEPLOYMENT OF A-12

Senator INOUYE. Well, we have been advised that the deployment of the A-12 will be delayed for cost or technical reasons. Is there any credibility to that view?

Admiral DUNLEAVY. Senator, based on the briefs, that I have had in the past year, I cannot lend any credibility to that argument.

CAPABILITY OF F-14D

Senator INOUYE. Can you tell us whether the F-14D, as compared to the successor, will be less capable to carry out its mission or just as capable?

Admiral DUNLEAVY. I hope the Navy ATF is a heck of a lot more capable than anything we have in the fleet today. We are seeing, again working with the Air Force on ATF, that it should be, air-toairwise and air-to-mud, the Navy version, an exceptionally capable aircraft.

Senator INOUYE. Theoretically it should be better, you say?

Admiral DUNLEAVY. Yes, sir; I hope it is more than theoretical. The ATF will be better.

F-14 AIRCRAFT SURPLUS

Senator INOUYE. There have been published reports that the Navy has a surplus of F-14 aircraft. Is there any credence to this?

Admiral DUNLEAVY. Sir, to go back to Senator D'Amato's graphs, you can look at, yes, at the present time, for these couple of years, we are going to have excess F-14's—I think the number is somewhere between 18 and 24—that are beyond what we need at the present time. But as you go out the years into the 1990's you can see where we start falling off our inventory requirements.

Again going back to Senator D'Amato's graphs, his graph is based on 7,500 hours service life, I believe, looking at it. And if we get up to 9,000 hours of service life that extends the life of the program out into the late 1990's. I am not sure of his figures.

But yes, at the present time we do have a few aircraft in excess, but again as we get into the 1990's, by service life, they start retiring from active flying and then we come into a shortage of aircraft.

The way we take care of the shortage of aircraft in the fleet is we start cross-decking, start taking them out of our training squadrons so we use them more in the fleet and accelerate the service life because we use their life faster. But again, if we work with Grumman and get the service life extension from 7,500 to 9,000 hours, again with prudent risk and because of affordability, we hope to make the F-14 last until the ATF arrives.

ACQUISITION PROGRAM

Senator INOUYE. In your acquisition program are you basing it upon 15 carrier battle groups or 14 carrier battle groups?

Admiral DUNLEAVY. We based that on 13 Active wings and two Reserve wings. We base it on the carrier air wings which we have for the F-14—the two Reserve and the 13 Active.

REASSESSING A-12 PROGRAM

Senator INOUYE. General Pitman, if I may ask a question, in your prepared remarks you maintained that the Marines are reassessing participation in the Navy's A-12 program due to fiscal constraints and because of the aircraft's "questionable expeditionary utility."

Previous testimony before the subcommittee indicated that the threats to the U.S. forces worldwide are increasingly sophisticated and, therefore, will necessitate aircraft like the A-12, even in Third World conflicts.

Why do you suggest that the A-12 is not needed by the Marines?

General PITMAN. Sir, we looked at it very carefully. In our expeditionary role the A-12 is not designed for expeditionary operations. I cannot go into the characteristics of the aircraft too much as far as what it looks like or how it will fly, but the Marine Corps does not have the long-range attack mission that the naval forces and the air forces do.

We plan to be colocated somewhere near our forces, and we will have to call on naval forces to provide us that kind of long-range support. The A-12 is an all-weather attack aircraft with considerable range. We believe that there are lower cost alternatives which will allow us to stay in the expeditionary mode with our aircraft and at the same time meet our close air support requirements.

The A-12 is not designed for a close air support mission, although it can accomplish it in all-weather conditions.

Senator INOUYE. Admiral, do you agree with that assessment?

Admiral DUNLEAVY. Yes, sir. Again, as General Pitman said, the primary role of aircraft for the Marine Corps is close air support close to the ground troops, while, we, the Navy, do the longer strike in support of their mission—long-distance, all-weather and low-level—that is the mission of the A-12.

INCREASED PROGRAM COSTS

Senator INOUYE. How much would the cost increase, the program cost, if the Marines withdraw?

Admiral DUNLEAVY. That will be for the record, Senator.

[The information follows:]

The answer to that question is above the classification I can discuss here. I will provide an answer through appropriate classified channels.

A-12 LESS EXPEDITIONARY THAN F-18

Senator INOUYE. General Pitman, because members of the committee will be very interested, can you submit any evidence you have that would show that the A-12 is less expeditionary than the F-18?

General PITMAN. Oh, yes, sir; we'd be glad to do that.

[The information follows:]

The information requested is classified and will be provided under separate cover.

SHORTAGE OF SPECIAL AIR SPACE USE

Senator INOUYE. I have many other questions, but you notice we have members waiting here.

Senator Stevens.

Senator STEVENS. I will be brief, Mr. Chairman. I am sorry to be late. I was at another meeting, a confirmation hearing on Ms. Newman to become our new head of OPM, which I think is a very important spot.

First, gentlemen, let me ask you. I did not get a chance to hear your statements, but I understand, Admiral, that you have raised the question of the growing shortage of special use air space. We have heard this raised concerning the problems of operations for training purposes over Europe in the NATO areas, too.

Being provincial as I am, I like to remind people that we did put in a new air combat maneuver instrumentation range in Alaska. It only cost $25 million. That shows I have been here too long to say "only" and "$25 million." But is this not a range that you could use for your Navy people as well as for the Air Force people for the training of your people?

You can use supersonic speeds over our State in most places. You have unrestricted approach, and it is quite similar to the terrain in Korea as well as northern Europe. I have been surprised you have not been using it. Could you not utilize that range?

Admiral **Dunleavy**. Senator, it is the proximity to our training sites for the overall carrier battle groups that probably has inhibited us in the past and not put more carrier battle groups up there to utilize your air space.

I agree wholeheartedly that the Alaskan air space——

BATTLE GROUP IN ALASKA

Senator **Stevens**. We would be happy to have a battle group in Alaska, Admiral. I am not worried about that.

Admiral **Dunleavy**. But again it is the prudent spending of our money, of sailing our ships from San Diego, Alameda, CA, Pearl Harbor, up to the operating area where they can operate in the air space. And the fellows that I have known that operate up there say it is remarkable training.

The Air Force was up there in March and General Yates will probably comment on that. But we are going to give it a hard look and see if we can utilize more of the Alaskan air space. But we are critical in the continental United States, in the southern 48, on air space overall, especially on the east coast.

Senator **Stevens**. I am really quite serious. When I was out in the Pacific and talked to some of the pilots out there, they told me when they go over some of our allied countries of the Pacific they have to increase their altitude rather than decrease it. They are on simulated training over land, but they have to go up. They cannot use any of the lower air space for any realistic training, and that has started to be the case now in Korea. It certainly is the case in Australia. It is the situation in the Philippines and it is the situation now in Europe.

And both in our country and, I think, northern Canada, talking about Alaska and northern Canada, we do not have this aversion to low-level training, summer and winter. I am not really asking about bringing your people to a permanent station in Alaska. I am just talking now about the use of those areas for training of your pilots.

You can put people on a C–5 and bring them over from Europe or bring them over from the Far East and have a 2- or 3-day experience. And if you had a few planes on detached service up there you could get some realistic training.

I cannot understand, as a pilot myself, how anyone could get any training in terms of overland maneuvering if they have to increase their altitude as they approach a foreign land, and that came from your pilots that told me they have to do that.

Admiral **Dunleavy**. Yes, sir; I concur. I am one of them. That is why I raised it in the statement. Air space is becoming critical. I will take it on board looking at the Alaskan air space. But again we like to train our fellows entirely, and I want to carry the battle group up close to your waters so we can use the air space.

NORTHERN EUROPE

Senator **Stevens**. I know, but when they come off that carrier, if they have to go into northern Europe, they are going to have to understand how to go through mountain passes and how to take care of themselves over very varied terrain in different types of situations—in spring and summer and fall and winter, particularly winter.

I think they ought to get some experience operating in those subzero temperatures and understand the problems. I just want you to know our area probably has more pilots per capita than anywhere in the world. I do not know anyone that is going to object to either Air Force or Marine or Navy training over our land mass, as I hear is taking place particularly in the Pacific and in northern Europe.

So I would urge you to think about it anyway.

Admiral **Dunleavy**. Yes, sir. We do a lot of flying in Norway for the same purpose, but that is the Atlantic fleet. I will talk to the Pac Fleet fellows and see if we can go north.

[The information follows:]

Alaskan airspace does provide an excellent environment for training our aircrews. The remoteness of this region from our west coast bases renders use for routine training operations difficult due to long transits involved for our ships and aircraft.

Carrier battle groups transiting to and from eastern Pacific deployments participate in NORPAC exercises in the Alaskan region, conducting valuable joint training operations with U.S. Air Force units. In the past two years our carrier battle groups have been involved in five NORPAC exercises. Later this year, three aircraft carriers and their embarked air wings will participate in PACEX, a large scale joint exercise making extensive use of Alaskan airspace. In the future, you can expect us to continue using the airspace over the Alaskan land mass.

V–22

Senator **Stevens**. They probably have the same attitude toward these activities as we do.

Another subject I am harping on too much is the V–22. I am still disturbed about the recommendation that has come to us from the Department of Defense on the V–22. It seems to me that one of the problems now is that we are down to having basically a Marine desire. I know that you have got to walk the line, General, so I am not asking you to cross the line.

But there ought to be a broader appeal for the V–22 in the Department of Defense than there currently is. I thought, Admiral, that the Navy ought to do more about being an advocate for its partner, the Marine Corps, as far as this V–22 is concerned.

Why is it that the naval aviation program did not put a higher priority on V–22?

Admiral **Dunleavy**. We are fully on board the Marine requirement for the V–22 and for a Navy version people have talked to us about submarine-killing with the V–22. At the present time the ASW suites we are looking at are still really on the drawing boards, for us to go full-court press to have, say, an SV–22.

We are looking at it for the strike rescue mission and a COD. But at the present time, again because of affordability, we are fully supportive of the Marine Corps requirement and in the outyears I can also see a civilian application. Again going back to Alaska, I can see the V–22 in Alaska doing all kinds of commercial activities.

CIVILIAN AIRCRAFT

Senator STEVENS. So can I, but until someone proves it out commercial aviation is not going to take that leap. We only have one major civilian aircraft in this country today that was not first developed by the military which was revolutionary in terms of technology as this is. So I think until you really put it to the test, and I do not know anyone who can put it to the test like the Marines, we are happy with their support, but until it is really put to the test I do not think the civilian community will adapt to it.

And yet it seems to me that as far as the Navy is concerned it has tremendous application there too. You increase the range of your current vertical takeoff helicopter capability threefold, maybe even more. And it seems to me that has got a great deal to do with your survivability.

Let me ask you one last question, Admiral. I am not picking on you necessarily today. You are going to retire the *Coral Sea*, right, and the *Midway*.

Admiral DUNLEAVY. Right now the plan is to bring the *Coral Sea* home and probably retire it at the beginning of fiscal year 1990. That is what is being considered. The *Midway* is remaining in place until we get the nuclear-powered carrier to replace it on active service.

15 FULL CARRIER AIR WINGS

Senator STEVENS. I want you to know I am one who fully supports the idea of having 15 full carrier air wings, and I think as we go into this new period of conventional emphasis that the ability of the Navy to continue to show the flag in the Pacific is going to be absolutely essential to maintain our relationships there.

But even with that feeling, why should we have 15 carrier air wings if you only have 14 carriers?

Admiral DUNLEAVY. This is just to maintain the training. There are 13 Active carrier wings and 2 Reserve air wings. So you have 13 regular Navy deployable carrier air wings going down to 14 carriers, deployable. It is again a rotation.

We sometimes fall into the trap of thinking of the air wings as just aircraft. It is about 2,500 people that we have to keep trained in order to have the warfighting capability to be called upon if necessary. And it is the critical involvement of the people doing moving of the ordnance, flying the aircraft, overall training that we have to keep that cadre together in order to man the aircraft on the carriers.

Now we have 13 Active duty carrier air wings and 2 Reserves.

12 ACTIVE CARRIER AIR WINGS AND 3 RESERVE AIR WINGS

Senator STEVENS. That is for another time. I thought he was giving me a note to shut up, but he did not.

That is where I was going, though. Why would you not be better off to have 12 Active carrier air wings and 3 Reserve air wings?

Admiral DUNLEAVY. Again, Senator, the deployment schedule. You know, we went through the times when we had the fellows going on 9- and 10-month cruises, and we saw a massive exodus of our enlisted personnel and officers, just saying, "Hey, you know, this is just too tough when I can go outside and get a higher paying job."

Senator **Stevens**. You do not have 13 at sea, even not with 15.

Admiral **Dunleavy**. It takes you three to support one deployed for the workup, the overall training. I mean, you cannot just put the fellows out there and say, "Go do it" without a good solid training cycle. And that is what we do. We have 12 months in home waters training to make the 6-month deployment.

[The information follows:]

Fourteen deployable aircraft carriers require a minimum of 13 active air wings and two reserve air wings. The reserve air wings are available for mobilization during times of national emergency. With our current maintenance schedule (SLEP, Overhaul, etc.), we normally have a balanced number of active air wings and aircraft carriers in our deployment/training cycle. Currently, with careful planning, we are still able to maintain the requisite flexibility during peacetime to forward deploy our carriers in a manner consistent with operational and personnel tempo considerations.

15 ACTIVE AIR WINGS

Senator **Stevens**. I understand that. They are not going to be training up my way. They are going to be training in the chairman's back yard over there in Hawaii or somewhere similar to that. But it still seems to me that if you are looking at the bottom line in terms of cost as we project out here in the future we would be better off to have 15 Active air wings.

But I think you are going to be better able to hold them if you look more to an additional air Reserve wing as compared to maintaining the Active duty air wing, and we are going to have to transition to more Reserves soon. Why do you not do it when you retire the *Coral Sea*?

Admiral **Dunleavy**. It is the mobilization. The Reserves historically since Korea have not mobilized. They do a fantastic job in their 2 weeks and their weekends, but when we need a deployment and say go now for 6 months we need an Active air wing to do that, and that is why again we ourselves want to keep it at 6 months portal to portal.

In other words, you sail from your home port. Six months later we expect you home. People will stay with us and do that. And then 12 months later go on a deployment. In a Reserve wing they cannot make that deployment. They can make it for 2 weeks, and then they have to come home because they have their regular job on the outside.

So a lot of people think it is more cost effective that way, but in the long run it is not.

Senator **Stevens**. All right. Well, I want to pursue it with some of your people further later. I appreciate your time. I do have another question concerning your airlift and think that we ought to try to review additionally now some of your needs and see if we cannot meet your airlift requirements in a better way. So I will give you that question for the record because I have taken more time than I should.

Thank you very much, gentlemen.

Senator **Inouye**. Senator D'Amato.

F-14D PRODUCTION

Senator D'AMATO. Thank you very much, Mr. Chairman.

Admiral, regarding the seriousness of the expected shortfall in naval fighters due to the cancellation of F-14D production, do you feel the Navy will be able to meet its requirement for fleet air defense and strike escort without further F-14 production?

Admiral DUNLEAVY. Senator, again it is going to take a heck of a lot of hard work on our part—us being the military—in figuring out how to make things last until the Navy ATF arrives, that is management, that is working with Grumman to get us from the 6,000 to 7,500 to the 9,000 service life projection.

COSTS

Senator D'AMATO. For the record, let us talk about 6,000 to 7,500 to 9,000. We really come into a question then when we have to begin to analyze cost effectiveness. How much will it cost? What will it take to try to get 25 percent more life out of a plane rather than continue production? You have a cost-benefit ratio and we have not even begun to calculate that.

If we take into account the fact that there has always been slippage in one of these major programs, if it works, and we have got a scenario on one of our charts where you have got a 50-percent shortfall. But, if you can have the best cross-decking, the best reworking; you get some slippage in NATF—and you are going to have it—we are in real trouble.

Let me go to the second question. I just think that what we have here is a situation where the Secretary of Defense has got a tough job meeting his budget. And he says, well, look, we have got a couple extra planes currently that the chairman related to.

But without production we see, as F-14's are being taken out of service, that we are in deep, deep trouble. Even if NATF comes on, and as we looked at the first chart, on schedule, we are still going to be at a particular period in time 21 percent down. Then you can talk about maybe some of this kind of cross-decking activity.

But let me ask you. Is it prudent to permanently close the F-14 production and simply wait for the NATF, hoping that its development and its production will be on time and budget? Is that prudent?

Admiral DUNLEAVY. With the fiscal constraints that we are in now, Senator, that is prudent.

Senator D'AMATO. You say that is prudent?

Admiral DUNLEAVY. It is a prudent risk we have to take.

ACTIONS

Senator D'AMATO. You are a pretty good soldier if you can say that is prudent. I have to tell you something. I am not looking to beat up on you, but I call your response into question if you tell me that that is prudent. Last week Admiral Trost said Navy fighter assets could be stretched by shuffling aircraft from training squadrons to ships, deferring maintenance. What effect do you feel these actions will have on combat readiness, safety, and morale?

Admiral Dunleavy. Again if we do our job right and make things happen, and again taking care of the aircraft and flying them correctly, maintaining them correctly, the option is we have got to make it happen.

Senator D'Amato. Have we worked up any figures to find out what it is going to cost to rework these planes?

Admiral Dunleavy. We will have to have that for the record, Senator.

[The information follows:]

F-14D Fighter Aircraft

Cost data for the NATF have not yet been developed. This data should be available by the end of FY-90.

PRODUCTION SCHEDULE

Senator D'Amato. The record indicates we have no figures on this. This is a mythical thing we are talking about, a mythical production schedule, a mythical development, a mythical reworking of the F-14's.

You know, Admiral, let me tell you something. I am talking about a parochial interest as it relates to Grumman; let us not kid ourselves. But in terms of national security this is not parochial and it is pretty serious. I am going to suggest that maybe we have an obligation to bring this to the Secretary of Defense's attention.

Let me ask you one other thing. What consequences will there be in eliminating Grumman as a Navy fighter manufacturer on future competition and prices of future aircraft?

No more competitiveness; are you concerned about it?

Admiral Dunleavy. Yes, sir; I am concerned about that.

F-14 PRODUCTION

Senator D'Amato. Well, for the record again, Mr. Chairman, if we eliminate F-14 production, we eliminate a manufacturing base and there will be no competition. If we have no competition, I want to see what the price of those planes and the cost to the American public is going to be in the future.

I think it is going to be far greater than we can afford, and I really do believe that the budget number crunchers have not looked at the potential for some very serious shortfalls in fighters for our aircraft carrier groups.

Without the Tomcat and without an ATF coming in on time and on budget, that crunch is going to be severe, and the budgets are not going to get easier here. If we begin to push NATF back in its development another year or another 2 years in addition to ordinary problems that we have in the development and production, we could find a scenario where that 53-percent figure is going to be a lot worse.

Then what do we do? Then we take the Tomcat and begin reworking it at a cost of billions of dollars, and we have old planes that we are reworking at much more cost instead of continuing the line.

Now, Admiral, do you think that the scenario I spelled out to you, could that take place?

Admiral **Dunleavy**. Yes, sir; it could.

Senator **D'Amato**. Thank you.

Thank you, Mr. Chairman.

Senator **Inouye**. Thank you.

Senator Sasser.

NAVY FIGHTER PRODUCTION

Senator **Sasser**. Thank you very much, Mr. Chairman.

Admiral, I just want to frankly say Senator D'Amato's statement about jeopardizing the future industrial base for Navy fighter production is persuasive with me. I fear that we are going down the path of the Navy relying on one manufacturer to meet Navy fighter needs.

It has been my experience just watching the budget figures that when we start relying on solely one manufacturer, whether it is producing fighter aircraft, ships, or other matters, the taxpayers end up paying a substantial premium for what they receive.

I just make that statement to you. It does not call for any comment from you. But of all of Senator D'Amato's concerns the one that I share the most with regard to the F-14 and Grumman is seeing perhaps Grumman go out of the Navy fighter business or even go out of business and us left with only one fighter manufacturer for the Navy.

General Pitman, how many V-22 aircraft had the Marine Corps originally proposed to buy?

General **Pitman**. For the Marine Corps alone, sir, 552.

V-22 TERMINATION

Senator **Sasser**. All right. Your testimony indicates that to accommodate the V-22 termination that has been proposed by the Secretary of Defense the Marine Corps will buy a mix of CH-60 and H-53 helicopters; is that correct?

General **Pitman**. Yes, sir.

Senator **Sasser**. Well, how many of those will you buy and at what cost?

General **Pitman**. Sir, for an equivalent lift force, our requirement is 376 CH-53E's and 590 CH-60's for a total of 966 aircraft using single sling loads. An OSD alternative proposal using double sling loads, which has not been tactically evaluated calls for 225 CH-53E's and 478 CH-60's for a total of 703 aircraft.

PURCHASING CH-60'S AND H-53'S

Senator **Sasser**. Well, what I am getting at is in terms of dollars. How much do you anticipate would be saved by purchasing CH-60's and H-53's as opposed to going forward with your proposal to purchase the number of V-22's that you alluded to a moment ago?

General **Pitman**. Sir, the proposed buy of what I would consider vanilla aircraft, in other words, those without the updated and more modern systems for the 21st century—the CH-53E as we would procure it today and the CH-60 variant similar to what we have today would cost in the vicinity of $10 billion in procurement, as opposed to about $19 billion for the a coproduced V-22.

Senator **Sasser**. Did you say billion or million?

General **Pitman**. Billion, sir.

Senator **Sasser**. So if you go with the helicopters as the Secretary of Defense is proposing you calculate a ballpark figure here of a saving somewhere in the neighborhood of $9 billion?

General **Pitman**. In procurement costs alone; yes, sir.

Senator **Sasser**. In procurement costs over how many years?

General **Pitman**. Well, sir, the procurement extends to the year 2007.

PROCUREMENT COSTS

Senator **Sasser**. So you are talking about procurement costs of $9 billion over a period of roughly 17 years?

General **Pitman**. Yes, sir, that is correct; using the proposed buy of 703 aircraft and only addressing procurement costs. The Marine Corps requirement is for 966 CH-53E/CH-60 aircraft for a V-22 equivalent force. This force costs approximately $5.5 billion more when procurement and 20-year life cycle costs are included and is significantly less capable.

MARINE CORPS LOSES

Senator **Sasser**. All right. In terms of military capability, in your view what does the Marine Corps lose by abandoning the V-22 option and staying with a CH-60 and H-53 mix?

General **Pitman**. Just as the naval forces would have an increased risk waiting for the NATF, we would experience an increased risk using 1970 helicopter technology well into the 21st century as opposed to using 1980-90 tilt rotor technology which was designed specifically to survive against the threat during that period.

So there is an increased risk involved with using an alternative. Helicopters are physically constrained to the maximum speed we have today because of the way they are built and the way they fly; whereas, the V-22 can achieve twice that speed in its fixed wing mode.

We also have increased survivability because of the way the V-22 or a tilt rotor of any kind is built. We are going to lose some survivability with helicopters. In the event of combat we would anticipate some increased casualty rate as a result of using helicopters vice the V-22.

We are also losing a lot of flexibility. The most important thing is the reduced survivability, sir.

SPEED OF V-22

Senator **Sasser**. Well, General Pitman, just as a layman looking at the V-22 versus helicopters, your helicopters would travel at a speed of what, 160 miles an hour?

General **Pitman**. They normally cruise around 140 to 150 knots, sir.

Senator **Sasser**. And then your V-22 would operate at what, about 300 miles an hour?

General **Pitman**. It would cruise about 275 knots.

Senator **Sasser**. So that worked out to about 300 miles an hour roughly.

General **Pitman**. Yes, sir; that is correct.

SURVIVABILITY

Senator **Sasser**. Now what difference does that 150-mile-per-hour differential make if somebody is down there shooting at you with a heat-seeking missile like a Stinger? As a layman, it is difficult for me to see how that gives you much additional survivability.

General **Pitman**. The increased speed reduces the exposure time in the range of enemy weapons. In addition to its speed, its vectored thrust capability allows it to accelerate out of the landing zone quicker and decelerate faster coming into the zone. So the time of exposure to the enemy weapons, whether they are guns or missiles, would be less.

The IR signature of the MV-22 is approximately 82 percent less than the IR signature of a normal helicopter because the engines are set outboard and they do not blow back on the airframe.

IR SIGNATURE

Senator **Sasser**. The IR signature, is that the heat signature?

General **Pitman**. Infrared signature; yes, sir.

Senator **Sasser**. OK.

General **Pitman**. The noise that the V-22 makes in flight is 75 percent that of a helicopter, which hinders the cueing of the gunner or the missileman. So again this modern technology increases survivability.

We have considered survivability quite extensively. The V-22 is almost completely made of composites. The engines and transmissions are much more survivable because the engines are separated by 38 feet, as opposed to 6 feet side by side found in most helicopters.

STUDY OF V-22

Senator **Sasser**. These are not hostile questions. I am simply asking these questions to develop information. Has anybody done a computer study or any other type of study that they could assign a percentage of additional survivability to a V-22 over a helicopter?

For example, is it 20 percent more survivable, 40 percent more survivable? Or do we know?

General **Pitman**. Yes, sir. We have performed a number of studies in the past as we were developing the aircraft program. We looked at survivability very carefully.

We found that we will suffer three to five times as many casualties using the alternate mix force as we would have suffered using the V-22, according to our calculations.

CASUALTIES

Senator **Sasser**. Are these human casualties or aircraft casualties?

General **Pitman**. Aircraft losses with increased human casualties as well, in about the same ratios, maybe a little higher because the

V-22 is designed for a hard landing. The engines in the nacelles break away as opposed to coming through the cabin, as in a helicopter which has a transmission and overhead rotor system.

Senator **Stevens**. Would the Senator yield for just 1 second?

Senator **Sasser**. I would be pleased to yield to the Senator.

Senator **Stevens**. I have to go to another meeting. I have some questions, Mr. Chairman, that Senator Kasten would like to have placed in the record and ask the gentlemen to respond to.

Senator **Inouye**. Without objection.

Senator **Stevens**. I thank you.

V-22 SURVIVABILITY

Senator **Sasser**. So it is your sense or the Marine Corps' view that the V-22 would be 300 to 500 percent more survivable than a comparable helicopter. Is that a fair statement?

General **Pitman**. That is probably an understatement, sir. We believe it is more survivable than that—anywhere from 8 to 10 times—depending on whether you are talking about the CH-53E portion of the mix or the CH-60 portion of the mix. Both are much more vulnerable to ground fire and missiles than the V-22. That is what I meant when I alluded to the increased risk of going to this force.

Senator **Sasser**. Well, now while we are talking about saving money, General Yates, I want to ask you the same question that Senator Stevens asked Admiral Dunleavy a moment ago. I read your prepared statement and I saw no mention of the Air Force Reserve nor the Air National Guard anywhere in that statement.

AIR GUARD AND AIR RESERVE CONTRIBUTION

Now does the Air Guard and the Air Reserve not make a substantial contribution to Air Force tactical airpower?

General **Yates**. Yes, Senator, they do.

Senator **Sasser**. Well, I am one of those who believe that the Air Guard and the Air Force Reserves should play a growing role in the future of tactical airpower. We are talking about budget constraints here, and they are going to force the Department of Defense to become more cost effective. I mean, we are hearing it here from the testimony of all three of you.

You are concerned about budget constraints. Why doesn't the Air Force place more reliance on the Guard and Reserve? Do you not agree it would be more cost efficient to do that?

General **Yates**. Well, to begin with we do place a lot of reliance on the Guard and Reserve. We place a lot of importance on the Guard and Reserve. As a matter of fact, the modernization of the airplanes in the Guard and Reserve has been a top priority in the Air Force for years. We intend to continue that. We are modernizing the Guard and Reserve with F-15's and F-16's, our most modern fighters, right off the production line today.

So they do play a critical role in our force planning. They are a part of every war plan that we have. They are getting our most modern equipment. They are being actively trained in demanding environments. So we do rely on them to a great extent.

BUDGET CUTS

Senator **Sasser**. Well, General Yates, I have great respect for what you say, but the budget before us actually cuts the number of primary assigned aircraft to Guard units. It has been my experience with the Air Force over the years that it is only with great reluctance that the regular line Air Force command wants to turn over first line aircraft to the Guard and Reserve units.

Now I have felt for some time that we get one of the best bangs for the taxpayers buck out of these Air Force Guard and Reserve units. The peculiar mission of the Air Force I think lends itself extraordinarily well to Reserve and Air Guard capability. And many of these Reserve and Air Guard pilots, in fact most of them that I have been associated with, are superb pilots, many hundreds of hours in cockpits.

And I would stack the majority of them up against some of your first line pilots. I think they are terrific aviators. The same goes for the Reserve Marine aviators and Navy Reserve aviators. And I think, in my view, Mr. Chairman, that is a place where we can save some money and still maximize our capability, moving more in the direction of Reserve and Guard units with regard to aviation.

So that is my view on that, General Yates, and I always make that point whenever we get someone up here from the Air Force.

General **Yates**. Well, Senator, certainly there is no disagreement in the Air Force about the quality of the aviators we have in the Guard and Reserve units. I would make a couple of comments.

You know, there are reductions in the general Air Force force. We are cutting from 37.5 tactical fighter wings down to 35, so you are seeing some decrease in our overall tactical forces. And I would also ask you to recall that there are some things which we are getting into, particularly increased operations at night, which we talked about earlier in terms of LANTIRN flights now and close air support later, that the Guard and Reserve are not well suited to do.

It is very difficult for a guy to work all day long and then come out and try to fly all night long. But I do feel like and I would like to stress that we are making maximum use of those people and it is an important priority in the Air Force to flow modern equipment to them right off the production line.

Senator **Sasser**. Admiral?

Admiral **Dunleavy**. We also concur in the Navy and Marine Corps on the quality of aviators we have in both the Reserve elements. But again it is the way we deploy and the mobilization of those Reserves that it sometimes inhibits our utilization of them across the board on regular deployments.

You go on a 6-month deployment, it is very difficult to have the Reserves participate. They do that with one or two air crews per wing, depending on what kind of business the fellow is in. A farmer out West will take the months off when they are not planting and will come in and get up to speed and they will deploy as one crew for a 3-week period to the Indian Ocean.

But on a regular basis they have a very difficult time getting away from work for the long deployments.

Senator **Sasser**. Thank you, Mr. Chairman.

Senator **Inouye**. Thank you. Senator Specter.

Senator **Specter**. Thank you, Mr. Chairman.

SHORT-RANGE NUCLEAR MISSILES

General Yates, I would like to explore for a moment or two the subject of our ability to handle short-range nuclear in Western Europe, depending on what happens with respect to the efforts by some to go to zero on short-range nuclear missiles. I regret not being able to be here for the entire hearing, but I was committed to be at a judiciary hearing on the deputy drug czar. If you have already covered this subject I will check the record on it.

General **Yates**. We have not discussed it, sir.

Senator **Specter**. OK. If some of the material calls for responses which are classified, I would respect that and ask you to provide that on a confidential basis to the subcommittee.

But there is considerable public interest in our capability on tactical in NATO if, as, and when, or depending on what happens on the negotiations on short-range. President Bush has taken the position that we will not go to zero and the final communique specified that there would only be partial reductions of short-range missiles. But that is a complex political issue and that may change in the course of time between now and 1992 when we talk again about modernizing and see what the political situation is at that time.

So my question, to the extent you can answer it in this public hearing, is given the kinds of reductions that you have testified about and the budget constraints which the Air Force is facing, would we have the air capability on the nuclear issue if that necessity should arise in NATO?

General **Yates**. Yes, sir; we do. It has been an important part of the modernization plan now since the NATO chiefs Montebello agreement in 1983 to modernize our nuclear forces in Europe.

We have unilaterally reduced substantially the tactical nuclear weapons carried by tactical airplanes that we have deployed in Europe, and the way that we are able to do that is by modernizing those weapons.

In the current budget the modernization effort is referred to as SRAM–T. It is a tactical version of the SRAM missile. It is a top priority of the SACEUR and we have funds in the budget to take the SRAM–II missile and modify it for tactical usage.

Senator **Specter**. To what extent, if I may interrupt you, have we reduced tactical airpower in NATO?

REDUCTION OF TACTICAL AIRPOWER IN NATO

General **Yates**. Not tactical airpower. We have reduced tactical nuclear weapons carried by tactical airpower. I would have to provide you that in a classified answer.

Senator **Specter**. Well, I would appreciate that. But the essence of what you are saying is that the modernization sufficiently compensates for that reduction?

General **Yates**. Yes, sir.

[The information follows:]

These figures do not include bombs assigned to tactical naval aviation. Reduction in gravity bombs during this period is due in part to the introduction of Pershing II and Ground Launched Cruise Missiles. In the future, the number of bombs will rise due to the removal of INF missiles, but will decline again as the new Short Range Attack Missile-Tactical comes into the inventory.

V-22

Senator SPECTER. Let me shift for just a moment to the issue of the V-22 and I appreciate the testimony that I heard you give, General Pitman, as I came in.

A number of us from Pennsylvania have met with the Secretary of Defense, Secretary Cheney, concerning this issue, and one of the matters which he raised was that although there has been very strong support from the Marines for the V-22 that it has not been a matter of interest to other branches.

My concern is whether there might be some development of utilization for the V-22. Perhaps the question would be better directed to General Yates, but let us talk with you, General Pitman, as to whether—or perhaps the Admiral could testify as well—there is any possibility of having the V-22 fit into the plans of the other services, which would give a broader base of need and might overcome some of the reservations which the Secretary has expressed about it.

General PITMAN. The original program was started by the Army, when the JVX, which is now the V-22, came on and it was to be for all four services. Since then, due to affordability reasons, the Army has backed out. However, they are still interested and still studying their needs for the V-22.

Senator SPECTER. Do you know why they backed off?

General PITMAN. Sir?

INTEREST IN V-22

Senator SPECTER. Do you know why the Army backed off from interest in V-22?

General PITMAN. Yes, sir. It was a matter of affordability; how many different aircraft types could they be developing at the same time.

It is my personal belief that once the V-22 becomes operational the Army would have to come back into the program or they would not be able to compete operationally. I believe they see it that way as well, but they do not know just when they can fit the V-22 in their procurement program.

Senator SPECTER. Would not be able to compete with whom, the Soviets or the Marines?

General PITMAN. Either one, sir. [Laughter.]

This is a unique capability and whoever develops tilt rotor technology first will have a significant advantage on the battlefield.

Senator SPECTER. You are pretty well convinced about the V-22, are you not?

General PITMAN. Yes, sir, I am. I was not when I came to town 2 years ago.

Senator SPECTER. I was not either.

General PITMAN. I have learned a lot about it. The Air Force has a requirement for that capability in their long-range special operations insertion and exfiltration program. The Navy was going to procure aircraft for the combat SAR, strike SAR and search and rescue capability. I believe those requirements still stand. They may have to be met, as in our case, by something not as capable.

I think there is a large requirement out there. Our allies are interested in it. The Soviets are very interested in it. I was in Boston at the American Helicopter Society and one of the Soviet rotor craft people was discussing their tilt rotor program in some detail.

We are not the only country in the world working on this development. It is expensive. It is unquestionably an expensive aircraft compared to other helicopters, but it is designed with all the features one needs to survive out in the 21st century—the forward-looking infrared, the navigation system, the electronic countermeasures, and other suppression devices in the aircraft. The V-22 is not all that expensive compared with today's helicopter similarly equipped.

General YATES. Senator, for the Air Force the program did include 55 airplanes for the Air Force for special operations forces. So the total program was about 657, so we had the Marine Corps requirement of about 550——

General PITMAN. The Marine Corps program was 552, the Navy was 50, and the Air Force 55.

AIR FORCE INTEREST IN V-22

Senator SPECTER. Are you saying, General Yates, that the Air Force has a keen interest in having the V-22 move forward?

General YATES. Well, we clearly had a keen interest in having the airplanes before they were canceled, and Secretary Cheney has said this was the most difficult decision he had to make.

With the loss of the CV-22 for the special operations forces there are missions that we will not be able to perform. And that is just a fact, and we will have to operate around that.

V-22 UTILIZATION

Senator SPECTER. Mr. Chairman, I do not want to take up an excessive amount of time. I have some questions which I would like to submit for the record, and I would conclude by asking Admiral Dunleavy if the Navy has any additional plans which would be utilizing the V-22 which might give it a broader based request which might justify the Congress differing with the Secretary of Defense.

We may have a sufficient basis already, but if you would respond to that question I would appreciate it.

Admiral DUNLEAVY. Yes, Senator. Again we are looking at, if it were affordable, to come up with a possible COD variant—carry onboard delivery variant. Also if we ever have the funds to really develop a sophisticated ASW suite to put in the back of it as a sub killer, there are applications for the Navy that if it ever becomes affordable we would be more than interested.

But at the present time it is that combat SAR requirement that we are most concerned about.

Senator SPECTER. Thank you very much.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you. Senator Bumpers.

Senator BUMPERS. Thank you, Mr. Chairman.

General Yates, let me ask you first what is our TACAIR presence in Korea?

TACTICAL FIGHTER WING IN KOREA

General YATES. We have a tactical fighter wing stationed in Korea now. Round numbers it is about 100 airplanes.

Senator BUMPERS. About 100?

General YATES. Yes, sir.

A–10

Senator BUMPERS. Do you have any A–10's there?

General YATES. Yes, sir, we do. We do have some A–10's and OA–10's. We have a wing of F–16's.

Senator BUMPERS. I think you have considerably more than 100 aircraft.

General YATES. I am mistaken on that. As of the third quarter, fiscal year 1989, we have 76 F–16's, 12 A–10's, and 12 OA–10's, plus 8 RF–4's, for a total of 108 aircraft. By the end of fiscal year 1990, we will have 96 F–16's, 18 RF–4's, and 12 OA–10's, for a total of 126 tactical aircraft in Korea.

KOREAN AIR FORCE

Senator BUMPERS. What do the Koreans have in their air force? Do you know that?

General YATES. They have F–16's. They have F–5's. They have some F–4's. Then they still have counted as part of their air order of battle some older airplanes like F–86's.

Senator BUMPERS. Are all their planes American-made?

General YATES. To the best of my knowledge they are; yes, sir.

SOUTH KOREAN AF VERSUS NORTH KOREAN AIR FORCE

Senator BUMPERS. There are other people perhaps who are on top of that maybe a little better and I do not want to force you into answers that you are not prepared to make. But let me ask you this.

Do you feel, based on the knowledge that you have, that the South Korean air force is capable of handling itself against the North Korean air force?

General YATES. Well, I would say that that balance is shifting. The North Korean air force is being provided MIG–29's by the Soviets and the Koreans, in my view, have a valid requirement to update their air force.

TACTICAL AIRCRAFT

Senator BUMPERS. Do you know what the numbers are?

General YATES. No, I do not.

[The information follows:]

The North Korean Air Force has a small nucleus of modern fighter aircraft of Soviet design, including [deleted] MiG-29/FULCRUM [deleted], MiG-23/FLOGGER, and [deleted] Su-25/FROGFOOT. [Deleted.] Older generation fighters in the North Korean inventory include [deleted] MiG-21/FISHBED, [deleted] Su-7/FITTER, [deleted] MiG-19/FARMER, [deleted] MiG-17/FRESCO, and [deleted] MiG-15/FAGOT/MIDGET. North Korea also possesses [deleted] antiquated Il-28/BEAGLE bombers.

U.S. PRESENCE IN KOREA

Senator BUMPERS. General, the reason I asked you that, and you might want to check on this further, I can tell you there is going to be a move in the Congress this year, certainly in the Senate, and I am going to be one of the ringleaders to get our troops out of Korea. I have not yet decided precisely what we ought to do so far as our air presence is concerned there.

I do not want to belabor the point here, Mr. Chairman, this morning but for a nation that has many times the GNP that North Korea has, an army as big, and a big trade surplus against the United States, and we become the lightning rod for every dissident group in Korea, if we were not there perhaps it would be somebody else that would be the focus of all that is evil, but I have a lot of thoughts about it.

I just do not see any reason for staying there any longer at a cost of over $2 billion a year when I think the South Koreans either are, or certainly ought to be, able to defend themselves rather handsomely considering the state of their economy versus North Korea's.

I might also say that I always feel very comfortable about our superiority in tac air over our counterparts. I do not know that much about the MIG–29. Obviously, nobody else does either since the Turks did not give us a chance to look at one.

But just in visits with Rabin after the Lebanese war of 1982 on how well the F–15's, F–16's, and the KFIR's and the others acquitted themselves against Syrian-flown MIG's, I think it was like 80 MIG's destroyed and not 1 single Israeli plane down. So it is not always just quantitative. It is qualitative. And in all the wars Israel has had against its neighbors and against Russian-made aircraft, I do not think it has ever been less than 50 to 3, even in 1967.

On another question, are you familiar with the President's proposal on the conventional arms talks in Europe that he has now said we should consider TACAIR?

General YATES. Yes, sir; I am familiar with the fact that he said it.

Senator BUMPERS. I am not going to ask you to defy your Commander in Chief this morning, but I do want to talk to you just a moment about that and ask you what you think about the numbers.

General YATES. Well, you know those specifics have to be worked out, Senator. I think basically there is a lot of things that have to be reconciled between now and the time that we actually decide which airplanes are going to be withdrawn and/or destroyed. I mean, there is an awful lot of work to be done.

Senator BUMPERS. We are off on a nonstarter here, I can see that.

General YATES. Yes, sir, we are. [Laughter.]

CARRIER-BASED AIRCRAFT

Senator **Bumpers**. Does the President's proposal include carrier-based aircraft, Admiral, or do you know?

Admiral **Dunleavy**. At the present time; no, sir.

Senator **Bumpers**. That is the way you would like to keep it, I assume?

Admiral **Dunleavy**. You got it, Senator. [Laughter.]

SLCM'S

Senator **Bumpers**. Admiral, while we are at it, let me ask you this question. Do we presently deploy SLCM's—well, they would not be SLCM's; they would be just ordinary cruise missiles on surface ships?

For example, do not some of the old battleships that we have retrofitted carry cruise missiles?

Admiral **Dunleavy**. Yes, sir.

Senator **Bumpers**. And we have been insisting with the Soviets that SLCM's not be included in the talks, correct?

Admiral **Dunleavy**. I will have to come back to you on that, Senator. I am not involved in that one.

Senator **Bumpers**. You do not know the answer to that?

Admiral **Dunleavy**. I do not know the answer.

[The information follows:]

Both conventional and nuclear variants of SLCM are extremely flexible Theater CINC's weapons which should not be included in START discussions with strategic offensive Triad forces. Specifically because of SLCM's diverse capabilities, flexible employment and inherent stability resulting from dispersal onboard many surface combatants and submarines, limitations on SLCM have no place in a START Treaty.

Aside from the tremendous warfighting and deterrent capability that would be sacrificed should SLCM be subject to constraints, the covert possibilities for production, storage and deployment, as well as difficulty in distinguishing between nuclear and conventitonal variants, all make verificaion impossible.

VERIFICATION PROBLEM

Senator **Bumpers**. Well, of course all the SLCM's we have now have conventional warheads, and the Soviets have been insisting that they be on the table simply because it presents a verification problem. I mean, we might have 4,000 or 5,000 conventionally armed air-launched cruise missiles or cruise missiles period.

Do you think that presents some kind of a verification problem for the Soviets? I mean, how are they supposed to determine the difference between a nuclear-tipped cruise missile and a conventional warhead cruise missile?

Admiral **Dunleavy**. In a personal opinion, you are asking the impossible.

Senator **Bumpers**. You cannot verify it?

Admiral **Dunleavy**. I do not know how you are going to verify it.

Senator **Bumpers**. That is all. Thank you, Mr. Chairman.

Senator **Inouye**. I suppose the only time you can verify is after it strikes. [Laughter.]

Admiral **Dunleavy**. It is a hell of a way to find out, Senator.

COMBAT EFFECTIVENESS

Senator INOUYE. General Yates, on the matter of combat effectiveness or military effectiveness and security consequences, the Air Force has always pursued a goal of 40 wings, tactical wings. Now you are coming out with 35. Is that number going to reduce your combat effectiveness?

General YATES. Well, it will, Senator, clearly reduce the way that we can respond to a wide variety of challenges across the world now. You know, depending on what our national priorities are, for instance if you took Central Europe and you decided you wanted to maintain that combat effectiveness at a constant, clearly we could do that.

But if you looked across the board, worldwide, the answer has got to be yes, it will.

ARMS CONTROL PROPOSAL

Senator INOUYE. Now NATO's latest arms control proposal calls for reduction of 800 aircraft, tactical aircraft. How would that affect your 35 wings?

General YATES. Well, again, as I mentioned to Senator Bumpers, none of this has been determined yet. I do not know how it would affect U.S. airplanes. It is just too early to say how that reduction is going to be effected.

As I understand the proposals, there would be an opportunity for the two alliances, the Warsaw Pact and NATO, to decide where they would take the reductions. So a lot of things would have to go into that, but, for instance, one possible alternative would be for each alliance to do away with their least capable airplanes.

So under that scenario then I do not know how many U.S. airplanes would be involved, but that is only one of a number of different solutions to that puzzle. So I cannot answer you as to how that would affect U.S. Air Force tactical airplanes.

Senator INOUYE. Are you suggesting to me that when a proposal of this magnitude is made in NATO we do not immediately look into this?

General YATES. No, sir; I am not suggesting that. I am suggesting that people are working this very hard. They are working on it as we sit here now to try to determine how this is going to be brought about.

I would suggest that, as acquisition people, we are probably nearer the tail of the dog relative to implementing those solutions.

TACTICAL AIRCRAFT

Senator INOUYE. I have been advised that you have recently permitted the average age of tactical aircraft to increase slightly. How do you calculate the effectiveness of an aircraft as related to age?

General YATES. Well, age is an indicator and nothing more. There would be some point when we are talking about 20-year-old airplanes where we start to approach a wall. You are talking about the structural life of the airplane which is something that would be critical, and you would face as a showstopper.

But it is really an indicator because clearly with the support of the Congress if we are able to continue to modify the airplanes, even older airplanes can maintain a high rate of combat effectiveness. On the other hand, it also is an indicator, though, that there are some things which you just cannot do with older airplanes.

We have had extensive discussion here today about CV-22's and of course I have mentioned that there are some thing we cannot do with older airplanes. As we approach an era of stealthy airplanes with advanced tactical fighters and the Navy's A-12, these are things which cannot be done with modifications to older airplanes.

So it is an indicator of the force. It is not meant and in my view you should not look at it as some sort of a brick wall. With the growth in it, it does indicate that we are not buying newer airplanes in sufficient quantities to keep the average age of the fleet even less than our objective of 40 tactical fighter wings from increasing.

EFFECTIVENESS

Senator **Inouye**. So one could say that with increased age the effectiveness would be reduced?

General **Yates**. In general you could say that that is true, yes, sir.

Senator **Inouye**. Would the Navy and Marine Corps agree with that too?

Admiral **Dunleavy**. To a certain extent. If you are talking about airframe and engine that is not quite true in my mind because you can put all kinds of avionics to upgrade your capability in the aircraft, but, as General Yates said, there is a point of no return where you are going to push the wall, the term he used. You can constantly upgrade avionics and sophisticated weapons systems along with the basic airframe and engine to that finite point and that is the hard point we are looking at.

Right now in the Navy today our carrier aircraft are about 10.5 years old and they are going to progressively get up to about 11, almost 12 years old by the end of this 5-year defense plan. Overall I think we are about 13 years old.

But you can modernize again the weapons system utilizing the basic airframe, but, as General Yates says, as soon as you get into the A-12, the ATA, the Navy and the Air Force ATF, that is a whole new ballgame.

78 F-15E'S

Senator **Inouye**. What effect will it have on your force structure if we go along with your recommendation that we cut the last 78 F-15E's?

General **Yates**. Well, we will end up with a total of 200 F-15E's, so this again will give us the minimum force structure overseas and basically we lose a wing of airplanes. That is basically the impact of F-15E's.

Senator **Bumpers**. Would the chairman yield?

What are we paying for those planes now, General?

General **Yates**. Just a second. The flyaway cost for F-15E is, in then-year dollars, $31.8 million.

CANCELING F-14D'S

Senator INOUYE. General Yates, the Navy is canceling the F-14D's to cut costs while awaiting the ATF. Why could the Air Force not terminate the F-15E in 1990 and cut down the cost by $3.4 billion?

General YATES. Well, what we are suggesting is that we cancel it in 1991. The problem with an earlier termination is that basically those are the overseas-deployed airplanes and so while 36 airplanes does not sound like a lot it represents a large percentage of those airplanes which are deployed overseas because you have got some overhead things that have to be done.

You have to have the training airplanes in the United States. You have to have enough guys in the United States that are up, that get trained here that can subsequently deploy overseas to the deployed locations. And so those really are the fighting end of what the first investment has all gone for.

So canceling the last 36 airplanes would have a significant impact on the total number of airplanes we have forward-deployed in Europe and in the Pacific.

IMPROVING THE F/A-18

Senator INOUYE. General Pitman, previous estimates in the cost of improving the F/A-18 exceeded $2 billion. What is your estimate now?

General PITMAN. Is that the Hornet 2000, sir?

Senator INOUYE. The F/A-18.

General PITMAN. Yes, sir. There are several upgrades that we and the Department of the Navy are looking at. One is the radar upgrade which certainly is required. Total cost for this upgrade is just over $1 billion. That is because of some classified disclosures and the need to make the radar in all F-18's capable of handling the threat out into the 1990s.

Senator INOUYE. You believe the improved F/A-18 would cost less than the A-12 program?

General PITMAN. Yes, sir; by a considerable amount.

This is also in line with necking down, which we call reducing the types and models and series of aircraft per service. This would leave the Marine Corps with a fixed wing attack force of F/A-18's and AV-8B's only.

The improved F/A-18 was part of the process. It would cut down considerably on our maintenance problems and the number of people that we are going to have to train on different types of aircraft. We are not suggesting the A-12 is not capable or we would not like to have it, but the costs that we anticipate out there would be considerably more than what we see the F/A-18 costing, sir.

The F-18, even with the radar upgrade, will not have the capability of the A-12 for long-range, all-weather attack. But for the close air support mission it offers significant advantages to us in the expeditionary mode.

Admiral DUNLEAVY. General Pitman just addressed it. There are different missions. The A-12 and F/A-18 upgrade, it is just from the Navy's point of view the A-12 has to be the long-range, heavy payload, all-weather attack.

Senator **Inouye**. Admiral, in your presentation you spoke of the retention problem you have with pilots. We have received many different reasons for this. On the other hand, we note that the Marines have very little problem in the retention of pilots. Why the difference?

Admiral **Dunleavy**. Sir, my problem retaining young fellows in the Navy today is I cannot fly them enough. Fellows join the Navy to fly and right now we are funding at 25 hours per pilot per month. That is adequate, but it does not keep the kid excited. It does not keep him becoming the very, very best fighter pilot or attack pilot in the world. He needs, in my personal opinion, somewhere between 32 and 38 hours a month every month to be very, very good and satisfied.

But when he is on deployment he is probably flying close to that. He is probably flying 35 hours a month. But when he comes home then he is back and his first month home he is probably not flying at all, and then he gradually ramps up to 12, 15, 20 hours a month. And if I can fly a young fellow hard every month 30, 35 hours a month, he will stay with me.

So the difference between the Corps and the Navy retention off the top of my head I cannot answer. I will have Chuck tell you about the Marines.

General **Pitman**. Part of it is a different mission. The deployments that the Admiral mentioned earlier with the fewer number of air wings and more deployments certainly has a lot to do with pilot retention.

Our squadrons go aboard carriers from time to time to assist the Navy and to provide better interoperability. When we have squadrons aboard ship and when they come back from a tough cruise we will have an inordinate amount of pilots deciding that they have had enough and would just as soon be home once in a while. So we share that problem when we are at sea with the Navy.

We do deploy overseas, so our pilots are away from home just as much. We have not escaped the shortage of pilots in the attack community. Right now the Marine Corps, overall, is a few pilots short of its goal of 3,800 total pilots, counting all the staff jobs and other things that people do. However, we are several hundred short overall in the TACAIR which would equate to the Navy and Air Force figures.

While their shortfall occurred earlier, ours is starting to appear and we are having to apply all kinds of management techniques and other means to keep our pilots in. We have not yet participated in any of the bonus programs that have been offered but we reserve the right to ask to join in.

As the airlines continue to hire in great numbers we are finding that they are attracting away a lot of people. The pilots or their families are tired of being deployed for such great periods of time.

Senator **Inouye**. How long is the tour of your pilots in Okinawa?

General **Pitman**. Sir, the tactical squadrons go over there for 6 months similar to a carrier deployment. The only difference is that they generally come home on time, whereas the carrier could be extended 2 or 3 months due to any international crisis. So the Navy has less control over when their sailors get home than we do in getting our people home.

Normally our squadrons rotate. Even if there is some sort of crisis, a similar squadron replaces them so there is no loss of continuity or combat power.

RETENTION PROBLEMS

Senator **Inouye**. Do you have any retention problem then?

General **Pitman**. Yes, sir. As I say, we are just starting to experience retention problems in our TACAIR communities, and we are transitioning some of our helicopter pilots into TACAIR to take their places. We have not had any reduction in the manning of our squadrons yet based on a shortage of pilots.

We are feeling the crunch just as all the other services are, not nearly as bad and lagging behind them, but we are not free from that kind of problem.

ATSS

Senator **Inouye**. How does the Navy, Admiral, justify starting an expensive new program in this period of fiscal constraint, and I am talking about the ATSS? That is a new start, is it not?

Admiral **Dunleavy**. Again going back to the neck down strategy of reducing the number of different type of aircraft we have in our air wings we are looking hard at an air tactical system to replace the C–2, the E–2, possibly the S–3—in other words, reduce the number of types of aircraft in the air wing down to probably four.

Senator **Inouye**. So that one aircraft will replace all those?

Admiral **Dunleavy**. We are looking at I call it a truck, a basic airframe and engine and then we would modulize the back end of it to make it whatever we want, like an early warning aircraft, a sub killer aircraft, carrier onboard delivery aircraft. It is more of a concept we are looking at it hard to see if we can again come up with a common airframe and engine and then modularize it into the specific mission we want, be it, as I mentioned before, the early warning, submarine killer or onboard delivery.

It is still in the very early development phase.

V–22

Senator **Inouye**. General Pitman, I do not suppose you would object too much if the Congress decided to ignore your Secretary's suggestion that we do away with the V–22? [Laughter.]

General **Pitman**. That is a very tough question, sir. We are concerned about the increased risk that we are going to face without it and certainly would like to see it reinstated. However, as the Commandant has stated, and as I feel as well, looking across naval aviation and even the Department of the Navy budget, I do not know how, within our current resources we could put it back in.

I would be hard-pressed to suggest a lower priority program that could be scrubbed to make room for this.

Senator **Inouye**. I am certain you have sensed by the nature of the questions that most of the members of this subcommittee are very supportive of the V–22 and if we are to be confronted with this decisionmaking I would like to have available not just the pros but the cons of the V–22 program.

So for the record I will be asking the following questions. I have been advised that the V-22 program has encountered major technical difficulties and has fallen significantly behind schedule. Is that correct?

General PITMAN. No, sir; it is behind schedule. It was originally scheduled to fly --June 15 of last year. That was an early-on estimate before they put any of them together. At the rollout in May of last year it was estimated that it would fly sometime in August. It flew its first flight on March 19 of this year.

It did have some minor technical difficulties that could have proved major. The aircraft had a problem with the blade grip that holds the rotor blade onto the rotor hub. This has been corrected and everybody believes the problem is taken care of.

I believe NAVAIR's assessment is that future risk is low and, in fact, I am not aware of any major technical difficulties.

Admiral Wilkinson.

Admiral WILKINSON. I am Admiral Wilkinson from NAVAIR, Mr. Chairman. The program is low to moderate risk, as any new development program will be. We do not think there are any show-stopping technical problems. We think the contractor has most of them in hand.

Senator INOUYE. So you are satisfied that all the challenges have been met?

Admiral WILKINSON. Not all of them, no, sir.

REMAINING TECHNICAL CHALLENGES

Senator INOUYE. What are the remaining technical challenges?

General PITMAN. One of the big items, sir, would be of course going into airplane flight. It has flown only in the helicopter mode to date. The first aircraft flew nine flights and was restricted from going into airplane flight because of safety considerations and not wanting to proceed too rapidly.

The first aircraft is due to fly again this week and the second aircraft should fly later this month. Transition into the aircraft mode has been done. We have had the prototype aircraft flying since 1977. It has transitioned some 2,000 times. So that would again be low risk.

CH-53E

Senator INOUYE. The Marines plan to retain the CH-53E heavy lift helicopter even if the V-22 is deployed. You recently wrote that the CH-53, like the V-22, has over-the-horizon capability but that the CH-53 carries 16 tons of cargo and the V-22 only 5.

If the over-the-horizon lift capability of the helicopter is so much greater than the V-22, why should the Marines not deploy more of these helicopters instead of the V-22 to move troops and cargo during amphibious assault operations?

General PITMAN. The CH-53E is the free world's largest heavy lift helicopter. It is designed to carry heavy loads up to 16 tons, and by inflight refueling it can carry that load a considerable distance. It normally goes much slower.

But the most important difference is that the CH-53E was not built as an assault aircraft. It is designed for heavy lift. It does not have a crashworthy fuel system or any special protection for the aircraft itself. It is 10 to 12 times more vulnerable to enemy fire or damage or being shot down by any kind of weapons that might be used against it.

The missions of the two are totally different. However, they complement each other if you are going a long distance. You can bring the heavy equipment as well, although it takes a lot longer. The V-22 will cruise with its internal load at up to 275 knots and the CH-53E carrying a load is normally down around 120 to 140 knots at the very maximum. Its range is very limited when it is carrying large amounts of equipment, although it has a long-range capability when carrying a load of personnel.

There is another great difference in that the CH-53E, as we currently have it, does not have any of the forward-looking infrared systems. It has a very limited night capability. The crashworthiness is not built in. Its survivability or ballistic tolerance is quite low compared to either the H-60 or the V-22.

Senator INOUYE. I have many other questions. Most of them are highly technical in nature and, second, I am not quite certain as to its classification at this stage. So I would like to, if I may, gentlemen, submit them for your consideration and response.

I would like to thank all of you for your assistance this morning and your testimony. Needless to say, we have the difficult task of determining how we can fund these systems and in the determination realistically I think we should take into consideration suh matters as the industrial base that Senator D'Amato has been speaking of for the last month or so.

If you have any further comments that you would like to submit as an addendum or clarification, please know that the record will stay open for that purpose. Anything that you can supply in supplementing your responses I think will be most helpful. I realize that in a format such as this oftentimes your responses are not complete and may be inadequate when you consider the total picture. So I would suggest that you go over this and supply us with clarifying statements if necessary.

SUBMITTED QUESTIONS

There will be some additional questions which we will be submitting for your response in the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

DEPARTMENT OF THE AIR FORCE

MAJOR REVISIONS IN TACTICAL AIRCRAFT PROGRAMS

QUESTION: How does the Air Force intend to fulfill the mission requirements originally intended to be met by these upgrade programs?

ANSWER: The F-16 Derivative program was originally a NATO cooperative effort consisting of two parts - a new "big" wing aircraft (Agile Falcon) and a mid-life upgrade (MLU) for improving the avionics of existing F-16s. The new aircraft part was terminated because European partners did not want the aircraft. The MLU part continues with the European partners. The new aircraft part of the program was aimed at improving the F-16's agility against Soviet air-to-air threats - specifically, the Fulcrum. Additional benefits were increased weapons carriage and "G" specifications (when carrying bombs) provided by larger/stronger wings. The Air Force continues to address these mission requirements under the F-16 Block 50 improvement program (e.g., full, beyond visual range (BVR) AMRAAM capability, increased performance engines (IPEs) and avionics upgrades). As for tactical reconnaissance, USAF has been tasked to review candidate aircraft to replace the RF-4. The review will be completed this summer. Since no decision has yet been made, it would have been premature to fund an RF-16. USAF intends to address funding at the conclusion of the ongoing review.

QUESTION: What are the specific military effectiveness impacts associated with not pursuing these upgrade programs, and why were they judged acceptable?

ANSWER: As a result of terminating the new aircraft (Agile Falcon) part of the F-16 Derivative program, future F-16s will be less capable against the newer Soviet fighters in terms of agility in the air-to-air arena. The increased performance engines (IPEs) provided in Block 50, however, will improve F-16 air-to-air agility to an acceptable level (vs current threat) for this multi-role fighter. The US Air Force will continue to address specific air-to-air mission requirements with dedicated F-15 MSIP fighters and in the future, ATF. However, as newer, more agile Soviet fighters continually flow in to replace older Soviet fighters, USAF is forced to evaluate agility, as well as avionics requirements for our multi-role force. This is currently being done in conjunction with the avionics improvements planned under the F-16 Multi-staged Improvement Program to ensure a balanced approach. As for tactical reconnaissance, if we fail to modernize our manned reconnaissance capability, USAF will experience a gradual degradation in combat effectiveness of attack assets. This degradation will result from a decrease in accurate, timely combat information which is available to execute assigned missions. The resulting degradation in battlefield reconnaissance is not acceptable and the Air Force intends to readdress a follow-on aircraft after completing the on-going review of replacement candidates. There is still time to correct program anomalies in the recce modernization program. We are working at a fast pace to complete our studies. The EO/IR sensors, ground stations and UAVs will be ready before the pods and fighters variant we select. Much work remains to ensure it will all come together. The Air Force is committed to seeing it through.

MAJOR REVISIONS IN TACTICAL AIRCRAFT PROGRAMS #1

QUESTION: What are the cost comparisons between continuing the F-16 Agile Falcon and RF-16 programs and the alternative chosen by the Air Force?

ANSWER: Discontinuing the Agile Falcon program will save $16 million in FY 1990 and $147 million in FY 1991. Discontinuing the RF-16 program will save $26 million in FY 1990 and $43 million in FY 1991.

Major Revisions In Tactical Aircraft Programs #2

QUESTION: What are the results of the Air Force's studies during the past two years to develop a follow-on to the F-4G Wild Weasel defense suppression aircraft?

ANSWER: The Air Force studies for the Follow-on Wild Weasel (F-WW) were initiated in late 1988. These were in response to the Defense Resources Board (DRB) decision to make F-WW a FY90 Major Systems New Start under the title Lethal Suppression of Enemy Air Defenses (LSEAD).

The studies are in progress, and the results will be correlated during 1989-90 to meet a Milestone I Defense Acquisition Board in the third quarter of FY90.

QUESTION: How do various alternatives compare in terms of cost-effectiveness and military-effectiveness?

ANSWER: The internal Air Force studies regarding F-WW are considering all aspects of the Defense Resources Board

and include cost and effectiveness analysis. They are continuing through 1989. They will be correlated in 1990 to meet a Defense Acquisition Board F-WW Milestone I decision in the third quarter of FY90. Until that time the results will not be finalized.

CLOSE AIR SUPPORT AIRCRAFT ISSUES

QUESTION: General Yates, the Commandant of the Marine Corps has testified that the AV-8B aircraft is the best close support aircraft in the world. Why has the Air Force decided to upgrade its A-10 aircraft and reconfigure some F-16 aircraft to meet Army close air support requirements, instead of evaluating other aircraft, including the AV-8B, for this mission?

ANSWER: The Air Force has conducted extensive analysis of a variety of aircraft for the follow-on Close Air Support (CAS) and Battlefield Air Interdiction (BAI) missions. Since 1984, there have been 22 detailed studies on CAS that evaluated 28 aircraft designs. The AV-8B, along with modernized A-7s, modified A-10s and F-16s and "austere" to "fully enhanced" designs have all been evaluated in detail. The Harrier proved to be an excellent CAS and Strike aircraft. It employs at speeds similar to the F-16 and meets the specific needs of the Marine Corps. Its vertical/short takeoff and landing (VSTOL) characteristics provide rapid ship-to-shore build up in support of amphibious operations and other limited contingencies. The F-16 is more cost-effective than the AV-8B for the Air Force. The F-16 acquisition and life-cycle costs would be lower than the AV-8B's because of the Harrier's associated logistics tail. The enhancements planned for the F-16 will provide it with improved capability compared to the AV-8B. While it clearly meets the Marine Corps' needs, the AV-8B does not meet Air Force needs for the CAS/BAI mission. Based on the results of the detailed studies, we plan to enhance 225 A-10s and 146 Block 30 F-16s for the CAS/BAI mission.

QUESTION: General Yates, what cost-effectiveness and military-effectiveness evidence does the Air Force have to demonstrate the validity of the decision to modify A-10s and F-16s for future close air support needs instead of holding a competitive fly-off of close air support aircraft candidates, as mandated by Congress?

ANSWER: As stated earlier, the Air Force has extensively studied the follow-on aircraft for the CAS/BAI mission. In order to meet the requirement for the battlefield of the mid-1990s, a modified aircraft is the most cost-effective and timely upgrade to current CAS/BAI assets. The consensus of the studies indicate that an improved avionics package is the most effective modification, both in terms of cost and mission effectiveness, that can be made. Other modifications are effective, however, avionic improvements provide the greatest return for the investment. Both the A-10 and the F-16 will be enhanced for the CAS/BAI mission with improved avionics. The Automatic Target Handoff System, Digital Terrain System and Pave Penny laser tracker will greatly improve the pilot's ability to acquire and destroy targets on the 1990s battlefield.

As tasked by Congress, DoD submitted a CAS test plan on March 31, 1989. As proposed, the fly-off could take up to five years to complete. DoD and Congress are currently considering a modified test plan and the Air Force is prepared to support the final decision.

QUESTION: General Yates, I am told upgrading the A-7 would cost about half that of procuring an F-16 for close air support. Is this correct, and how does this factor into the decision to procure the F-16 for close air support?

ANSWER: Based on our cost estimates, upgrading the A-7 would cost roughly one half the cost of a new F-16. The Air Force has fully funded the A-7F prototype development. The prototypes have not yet flown, so it is difficult to make a production decision. Once the prototypes fly and validate performance requirements, the Air Force will consider procurement.

It is premature to assess how a decision on the A-7F would affect future force structure. Independent of an A-7F decision, we plan to enhance a portion of our Block 30 F-16s and A-10s for the CAS/BAI mission. There has been no decision to procure a new F-16 aircraft for CAS/BAI (designated A-16).

COMMON TRAINER ACQUISITION

QUESTION: General Yates, last year the Congress directed the Defense Department to review its plans for trainer aircraft and submit a report which to the "maximum extent possible" will lead to the Air Force and Navy buying the same aircraft. I see though, the Air Force is going ahead with its plans. To what extent are the two services attempting to use each others' training aircraft?

ANSWER: The Air Force and Navy will have several opportunities to jointly procure trainer aircraft over the next several decades. These opportunities are maximized in the 1989 DoD Trainer Aircraft Masterplan and supported by a formal Memorandum of Understanding (MOU) between the Navy and Air Force. This MOU specifically tasks the services to continue cooperation in ongoing and planned trainer acquisition programs. USAF and USN personnel are currently working toward commonality by including options for the Navy in our Tanker-Transport Training System (TTTS) contract. The Navy would use these aircraft in their Naval Flight Officer Training program. Likewise, our staffs are working together to write a Joint System Operational Requirement (JSOR) for the Primary Aircraft Training System (PATS) to replace both services' primary trainers. We are working together from the start to ensure that a single aircraft can be found to answer both services' needs. The Masterplan also includes a long term plan to replace the services' advanced trainers, again, seeking commonality.

QUESTION: General Yates, the Air Force plans to acquire an off-the-shelf TTTS aircraft to reduce use on the T-38, thus continuing the T-38 past the year 2000. The General Accounting Office says the Air Force could hold off on the TTTS and still get by with the T-38, thus saving $1.5 billion through FY 1994. From your perspective, what is wrong with the GAO's conclusion?

ANSWER: While the GAO states that delaying TTTS would save nearly $1 billion by 1994, the long term impact of such a delay would be unacceptable. First, the delay would not save any money, only delay its expenditure. More importantly, such a delay would eliminate any flexibility to increase our training capacity, flexibility we need during these critical pilot retention times. Delaying TTTS would have the added effect of forcing the Air Force to buy the TTTS and the T-37 replacement in the same time frame. Such a strategy would be fiscally unsound, requiring an extremely large share of procurement dollars for trainers during very tight budgetary times. In addition, delaying the TTTS would complicate future opportunities for joint trainer acquisition between the Air Force and Navy as established in the 1989 DoD Trainer Aircraft Masterplan. Finally, the GAO idea of slipping TTTS was predicated on the assumption that the T-38 fleet could sustain a much higher than normal utilization rate. Historically, the last time we flew the T-38 as much as the GAO would require was during the Vietnam War. During that time, our pilot requirements were significantly higher and our training infrastructure (bases and airspace) was much larger. We also suffered attrition rates that would be unacceptable today, losing 16 aircraft in 1970.

QUESTION: General Yates, if the Air Force bought the Navy T-45 as a replacement for the T-38 in the mid to late 1990s, it could save millions in development costs. Have you considered this option, and has it been rejected? If so, why?

ANSWER: In accordance with Congressional direction, we looked at this option very closely when developing the 1989 DoD Trainer Aircraft Masterplan. There are several problems with the Air Force's use of the T-45 in the time frame mentioned. First, the T-38 is still considered to be one of the world's best trainers and will not need to be replaced for some time. Buying the T-45 in the mid 90s, then, would amount to buying something that we just don't need. Second, the T-45 has numerous modifications to enable carrier landing training for Navy pilots. These modifications offer no advantages in the Air Force role. Instead, they would either need to be removed, at a significant cost, or we would be forced to carry around a weight penalty of nearly 1000 pounds for the life of the aircraft and accept the associated increases in operating costs. Finally, buying the T-45 would basically mean sole-sourcing a multi-billion dollar acquisition, providing us with none of the benefits of competition.

QUESTION: Why is it we can get the two services to agree on common fighters and attack planes, but the requirements for trainers just don't match up?

ANSWER: As described in the 1989 DoD Trainer Aircraft Masterplan, the Air Force and Navy are working toward trainer commonality right now. We fully expect the Primary Aircraft Training System (PATS) program to result in a joint trainer acquisition and are working joint requirements specifications today. We fully support the co-developed and coordinated Trainer Masterplan as providing the maximum opportunities for joint trainer acquisitions.

ELECTRONIC WARFARE (EW) PROBLEMS #1

General Yates, development of Air Force electronic warfare (EW) programs have been plagued with problems. Recently, the commander of the Tactical Air Command, Gen. Robert Russ, reportly conceded there is a fundamental problem in the way electronic combat programs are designed, developed, and sold.

QUESTION: What specifically has the Air Force done differently in the past year to improve the management and effectiveness of its electronic warfare (EW) development and procurement programs?

ANSWER: Going back slightly more than a year, the Chief of Staff of the Air Force in March of 1988 convened a four-star review of EW programs and requirements. That review was the impetus for many of the changes we see today in our EW procurement process. First is an increased emphasis on following the requirements process, so the development community has a clear understanding of the user's needs. Internally, the Air Force is insisting on explicit statement, and detailed documentation, of EW requirements before any developments are undertaken.

Second is an effort to improve the EW test process. A standardized test path is defined for all EW programs: analytical modelling; hardware testing at government simulator facilities; static, installed system testing at anechoic chambers: and actual flight testing in two distinct phases which culminate in operation against replicas of enemy air defense systems where possible. A concomitant test facility standardization and improvement program has also been established to support this sequence. Third, in the management area, the Air Force Electronic Combat Office was established. This is an independent organization jointly manned by people from our Systems Command and Logistics Command. It was established to better focus EW acquisition and upgrade programs, and to ensure that EW programs are technically and fiscally executable and meet the user's needs. This office has already had an impact on our plans for several major efforts.

QUESTION: What assurance should Congress have that these changes will yield the desired improvements?

ANSWER: There are no explicit guarantees that the measures cited above will eliminate all the problems experienced in the past with EW programs. However, there are several reasons to believe that the Air Force is committed to resolving these issues. The first is that the Air Force is acutely aware of its responsibility to conduct all of its procurements in a manner which will satisfy the highest expectations of Congress and the American public, and therefore is giving its best effort in searching for solutions. The second reason is that the Air Force understands that EW systems as a class are extremely important to its success in combat; hence they warrant the utmost attention when their developments falter, and indeed they are getting that attention. The last reason is that the Air Force realizes the degree to which declining defense budgets are going to affect the investment accounts, and the attendant need for efficient use of the funds that survive. It is always important to invest carefully, but a contracting budget creates additional urgency by removing any cushion against the effects of mistakes. When only critical programs are funded, any losses in one area are going to have adverse budgetary impacts on others, or force much quicker program cancellations when problems arise. For all of these reasons, you can be assured that the Air Force has been very aggressive in injecting more discipline into its EW procurement procedures and in responding to problems as they arise.

ELECTRONIC WARFARE (EW) PROGRAM PROBLEMS #2

Question: The Air Force Scientific Advisory Board has commissioned a study of the service's electronic combat requirements. Results of this evaluation are due this Fall. What are the principal issues being investigated in this study?

Answer: The principle issue to be investigated in the Scientific Advisory Board study is the process by

which the Air Force establishes requirements, develops and selects Electronic Combat (EC) systems, and operates fielded EC equipment. The study commissioned by the Air Force Chief of Staff, will be completed by 12 Aug 1989.

Question: How does the Air Force intend to use this study in choosing and managing its electronic warfare programs?
Answer: Past and present EC acquisition programs will be analyzed for programmatic and technical problems and lessons learned. Alternative acquisition strategies will be suggested for future EC research, development, and production programs.

Question: Is it conceivable that the study might recommend changes to the electronic warfare programs contained in the fiscal 1990 budget request?
Answer: The Air Force budget request, as shown in the amended FY 90/91 President's Budget, will not change because of this study. Near-term FY 90/91 focus is on improved acquisition management of on-going EC systems.

Question: Which major EW programs contained in the fiscal 1990 budget request might be most impacted by the results of this study
Answer: None.

AMRAAM MISSILE #1

Senator Inouye: General Yates, the 31 December 1988 "Selected Acquisition Report" on the AMRAAM missile identifies a four month slip of the Lot III (FY 89 funds) full go-ahead decision from May 1989 to September 1989, the last month of the fiscal year, in order to "accommodate flight testing that will occur through 2nd Quarter.

On 1 June 1989, the Committee was notified by the Air Force that the "for score" F-15 Captive Carry Reliability flight testing has been suspended in order to "insert some design fixes that are necessary due to an F-15 captive carry fuselage environment more severe than previously identified."

QUESTION: In light of these continued delays in the AMRAAM program, will the Air Force make the Lot III go-ahead decision by 1 October 1989?
ANSWER: A Conventional Systems Committee program review of AMRAAM was held on 29 June 1989. A Lot III full go-ahead decision was delayed until the first week of October. This decision will be based, in part, on favorable captive carry program results.

AMRAAM MISSILE #2

QUESTION: Gen. Yates, have all AMRAAM effectiveness and suitability requirements been demonstrated in combat-realistic tests using production representative hardware and software? If not, could you please identify outstanding performance issues.
ANSWER: The Air Force independent test group and 33rd Tactical Fighter Wing have continued to actively pursue captive carry testing of AMRAAM since the early May period referenced and have now (as of 11 June 1989) completed 978 hours of captive carry

testing. Six hundred forty of these hours (including the 500 hours referenced in the question) have been accumulated on the original Lot I missiles. The second stage of current CCRP testing is being accomplished with proposed fixes to the basic problems identified in the referenced tests. Three hundred thirty-eight (338) additional hours have been accumulated on hardware containing these fixes with two failures occurring to date. The results of these tests should provide definition of whether additional fixes are required.

There is one major area which requires operational test to verify effectiveness and that is the 4 versus 4 shot which will show AMRAAM's capability in the multiple target environment. That shot is scheduled for this summer. Additionally, there are three warhead shots. A precursor shot to 4 versus 4 has already occurred with the missile scoring a direct hit. In the suitability area the one remaining issue is the missile's reliability in the F-15 fuselage captive carry environment.

QUESTION: Is there agreement between the development activity and the various test organizations on what outstanding performance issues are remaining?

ANSWER: Yes.

QUESTION: Is there a fully coordinated and approved test plan which outlines the issues [that] are remaining?

ANSWER: Yes. The AMRAAM Test and Evaluation Master Plan is fully coordinated and approved, and comprehensively addresses issues, tests, and timeframes.

QUESTION: What is the status of efforts to ensure that the missile's specifications are adequate to withstand the flight environment on the F-15 fuselage stations and the F-18 pylon stations? When will any necessary changes be incorporated?

ANSWER: We have completed an extensive Instrumented Measurement Vehicle captive flight test program to quantify the environment induced on the missile during F-15 fuselage carriage. We have also obtained limited flight test data on the F/A-18 sufficient to compare energy levels placed on the missile with the F-15 environments. The F-15 is the driving environment for missile qualification/specification values. In addition, we have worked with operational forces to identify the frequency of occurrence of these high vibration levels. We have followed this work by instituting a ground vibration program for Hughes and Raytheon hardware to give a quick assessment of fixes being introduced to meet these high levels.

QUESTION: Will both producers of the AMRAAM missile be required to demonstrate that their missiles will achieve reliability requirements before they receive contracts beyond low-rate production?

ANSWER: Yes. Both contractors' missiles are in the captive carry flight test program and the fixes will be fully demonstrated irrespective of whether they are Raytheon or Hughes.

QUESTION: Was the full-scale development phase completed in July 1988 in accordance with the restructured schedule? If not, when was or will the effort be completed?

ANSWER: The last full scale development launch occurred on 30 January 1989. A total of 95 test launches were conducted including six separation and control vehicles utilizing F-14, F-15, F-16, and F/A-18 aircraft.

AMRAAM MISSILE #3

QUESTION: Hughes was to deliver its first production missile in September 1988; Raytheon's was due in January 1989. Were these deliveries made on schedule and are the contractors achieving anticipated delivery rates? Identify any variance between the planned and actual delivery rates and describe known causes for these variances.

ANSWER: Hughes was to deliver its first production missile in September 1988 and did so. Raytheon was to deliver its first production missile in January 1989 and did so. Neither contractor has yet achieved anticipated delivery rates. This has been due to normal problems both contractors experienced in ramping up the production of guidance sections (IF Receiver/Range Correlators), and control sections (electronic hybrids). The contractors have now shown improved yields of these subsystems and are on-track to get up to production rate and will support the scheduled IOC.

QUESTION: Will the variances in production deliveries have any impact on the October 1989 IOC?

ANSWER: The Initial Operational Capability (IOC) schedule continues to be targeted to October 1989, for missile deliveries. This schedule is dependent on the contractors achieving required production rates over the next few months. All hardware delivered for initial operational use at the 33rd Tactical Fighter Wing will have unrestricted use on the F-15 pylon stations, and limited use on F-15 fuselage. No roadblock has appeared which would preclude this schedule.

AMRAAM MISSILE #4

QUESTION: The fiscal year 1989 Appropriations Conference Committee expressed concern over a trend of rising AMRAAM unit cost and directed the Air Force to take necessary steps to lower the unit cost in FY 1989 and the outyears. What actions have been taken and what results have been achieved to date?

ANSWER: A multi-year procurement (MYP) program has been added starting in FY 1994 with an estimated saving of $195.3M (TY). This saving is reflected in the 31 December 1988 Selected Acquisition Report. Another initiative includes continued emphasis on AMRAAM Producibility Enhancement Program (APREP) projects, with current value engineering proposals to incorporate these projects being incorporated as rapidly as possible. Additional APREP projects and Industrial Modernization Incentives Program projects are being considered.

TACIT RAINBOW RADAR KILLING MISSILE

QUESTION: General Yates, how much will total program and unit costs increase for Air Force TACIT RAINBOW when Navy withdraws?

ANSWER: According to our current Program Office estimates, the cost increases due to Navy withdrawal are as follows: The Program Acquisition Unit Cost (PAUC) will increase approximately 24%

and the Procurement Unit Cost (PUC) will increase approximately 14%. This is an increase of $450 million (then year dollars) to procure the same quantity for the Air Force. However, these figures reflect FY 1992-1994 Air Force procurement funding as it was prior to the Navy withdrawal. It is during these years that we planned to accomplish our production ramp-up to economic production rates. With the Navy withdrawal we no longer have a reasonable production ramp-up. This situation must be resolved at the earliest opportunity. If the profile for the early production years is corrected, the estimated cost increase for the Air Force will be $350 million vice the current $450 million.

QUESTION: The Joint Chiefs are reassessing aircraft and missile requirements for killing enemy air defenses and associated radars. General Yates, how will this reassessment affect Air Force TACIT RAINBOW procurement?

ANSWER: This question is difficult to answer until the reassessment is completed. TACIT RAINBOW is only one of a number of lethal and non-lethal systems, currently in or intended for production, which will be used to destroy and/or suppress enemy air defenses. Any changes in quantity requirements for TACIT RAINBOW will be considered as part of an overall defense suppression plan.

DEPARTMENT OF THE NAVY

T-45 TRAINER ACQUISITION

Question: Admiral, the Navy has decided to delay the production of the T-45 trainer by one year to fix the deficiencies uncovered in testing. However, I note that the amended budget still provides $153.1 million for procurement costs. Can you tell us why, if we are delaying the program there is still a requirement of $153.1 million in FY 90?

Answer: The T-45 Training System consists of a total training systems approach to procurement. As such, even though aircraft procurement was zeroed in the FY 1990 T-45 buy, many requirements still remain. FY 1990 funds remaining will be utilized for instrument and visual simulators, a computer based training integration system, academics, logistics support assets, and systems spares. These requirements are consistent with the FY 1990 aircraft budget reductions and will be reflected in the new program baseline.

Question: According to the original budget request almost $100 million was requested for training equipment. Considering the problems that have been encountered to date, why does it make sense to continue to procure simulators and other related equipment until the specific flying characteristics of the aircraft are determined?

Answer: We have full confidence that aircraft flight handling characteristic solutions are at hand. Although the final aircraft characteristics have not been determined due to ongoing flight testing, changes to the simulator to match aircraft handling characteristics are available through relatively simple software changes. This capability to change the simulator software baseline has already been demonstrated in the full scale development simulator. Since T-45 simulator procurement requires a lead time of approximately 30 months, any further reduction in simulator procurement will exacerbate schedule slips.

Question: At the end of the first half of the fiscal year, less than one percent of the $432 million appropriated in fiscal year 1989 had been obligated. In light of this, couldn't all of the FY 1990 request for procurement funding be deferred?

Answer: FY 1989 procurement funds have not yet been obligated due to ongoing flight testing and a requirement for a Defense Acquisition Board (DAB) program review prior to the release of FY 1989 funds. The revised budget spreads the delivery of the 24 FY 1989 aircraft over two years instead of the originally planned one year, effectively continuing production at the pilot production rate. The FY 1989 budget is required to fund the Congressionally authorized and appropriated 24 aircraft and limited support items associated with these aircraft. The FY 1990 funding is required to procure the balance of the support items, including simulators and the NAS Kingsville site standup. These support elements were originally programmed for FY 1989, but were slipped one year to be consistent with the restructured aircraft deliveries. To defer the FY 1990 funding would cause another year slip in the introduction of the T45TS since the required simulators, academics, and support equipment would be correspondingly delayed. This delay would impact training command operating expenses and would require more extensive service life extensions for the T-2 and TA-4 aircraft.

NEW NAVY PROGRAM TO DEVELOP A MULTIPURPOSE CARRIER SUPPORT AIRCRAFT

QUESTION: What are the fiscal year 1990 through 1994 costs and the total program costs for the ATSS?

ANSWER: First, the program you are referring to is now called ATS which stands for Advanced Tactical Surveillance. The ATSS acronym was deleted approximately a year or so ago and is no longer used in the Navy. The RDT&E, N costs for the program right now are as follows ($ M):

FY-90	FY-91	FY-92	FY-93	FY-94
1.0	1.5	4.0	50.0	198.2

Total program costs as of now are not definite and are dependent on the type of system chosen.

QUESTION: Has the Navy done a detailed cost-effectiveness and military-effectiveness analysis to determine whether a new aircraft program makes more fiscal and military sense than maintaining and improving the current aircraft it might replace?
ANSWER: It is presently being reviewed in the Carrier Air Wing Study (CAWS-89) study and should be available in the near future.

QUESTION: Has the Navy included in its fiscal 1990-94 budget, and in its Extended Planning Annex for the rest of the century, sufficient funds to develop and procure the Advanced Tactical Support System?
ANSWER: That also is being looked at right now with several alternatives and tradeoffs with other programs.

QUESTION: The Navy may not have sufficient funds for the rest of the century to develop its new front-line aircraft, the A-12 and the Navy Advanced Tactical Fighter, and to buy enough current generation aircraft. How does the Navy intend to afford the development and procurement of the Advanced Tactical Support System?
ANSWER: That's being looked at right now through numerous studies to determine how we can fit this necessary program into our long range aviation plan.

QUESTION: The Navy has spent billions recently to upgrade the current generation aircraft the ATS would replace -- the E-2C, EA-3/ES-3, EA-6B and S-3A/B. Considering the large military advantage these recently-modernized aircraft have over Soviet systems, what deficiencies exist in them which require beginning a costly new replacement program at this time?
ANSWER: They are presently at their limit for improvement in capability. With the ever improving threat, the capabilities of these aircraft will not be able to counter this threat in the year 2000 and beyond, hence we must start now to develop a system able to perform these critical missions in the year 2000 and beyond.

TACIT RAINBOW

QUESTION: Admiral Dunleavy, the Navy has deferred or ended its participation in the TACIT RAINBOW program. What will be the additional costs associated with increased procurement of HARM missiles to compensate for any shortages in radar killing missiles?
ANSWER: The total inventory requirement of HARM was decremented in 1987 to adjust for the planned inventory of TACIT RAINBOW. Concurrently, the modeling of defense suppression within the Navy and Marine Ordnance Requirements model was refined resulting in another upward adjustment to the HARM inventory. No attempt was made to break out the effects of these two changes at that time. The Navy's Non-Nuclear Ordnance Requirements planning process is

presently in its annual update which will reflect the increase in HARM inventory requirements needed to compensate for the cancellation of TACIT RAINBOW. When that analysis is complete, I will provide you with that information.

QUESTION: Admiral Dunleavy, Congress understands that Navy withdrawal from TACIT RAINBOW was decided by Navy comptrollers and not recommended by aviators. What are the military impacts of the Navy's deferral or withdrawal from the TACIT RAINBOW program?
ANSWER: While the decision to terminate the Department of the Navy's participation in the TACIT RAINBOW program was driven in part by Fiscal considerations, developmental problems, including quality assurance and cost growth, were also a part of that decision. The Department intends to meet anti-radiation defense suppression requirements with HARM and Shrike.

QUESTION: Did the Navy do a detailed cost and military effectiveness analysis before deciding to withdraw from TACIT RAINBOW?
ANSWER: The Navy's decision was based upon known developmental problems coupled with fiscal considerations.

QUESTION: Admiral Dunleavy, the Navy was planning to procure 7,000-13,000 TACIT RAINBOW missiles--each for about half the cost of procuring HARM missiles. If the Navy could not afford TACIT RAINBOW, how can it afford HARM?
ANSWER: TACIT RAINBOW is still early in its production efforts, and would not start delivering Navy missiles until 1994. Given that and the fact that HARM is in production and well down on the learning curve with competition of the HARM guidance section planned for FY 1992, HARMs would be procured by continuing the HARM program beyond its planned termination date rather than increasing near term HARM buys. We are reviewing options to meet our requirements in the most economical manner.

QUESTION: Admiral Dunleavy, descriptions about the Navy's position on TACIT RAINBOW are unclear. Is the Navy simply deferring, or ending, its participation in the program?
ANSWER: We have ended our participation in the TACIT RAINBOW program. However, we will continue to review all options during the normal PPBS cycle.

QUESTION: If the testing program demonstrates improvements in TACIT RAINBOW's performance, will the Navy reconsider it decision whether to participate in the program?
ANSWER: The Navy intends to review its decision to participate in the TACIT RAINBOW program, as well as other warfighting options to counter enemy defense. Demonstrated improvements in missile performance will have an impact on that review.

QUESTION: Admiral Dunleavy, how will it affect the Navy's decision to withdraw from the program? Isn't the Navy withdrawal decision premature until this reassessment is completed and analyzed?

ANSWER: We believe that the Joint Chief's study will show that TACIT RAINBOW is a major contributor to overall defense suppression efforts, but we do not anticipate anything that would cause us to instantly change our mind. The Navy decision was made on demonstrated system problems within the TACIT RAINBOW program and on budgetary constraints. It will require significantly more detailed analysis than was available to us in April and a turnaround in either missile performance or budget constraints.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

NAVY AIRCRAFT INVENTORY AND FORCE REQUIREMENTS

SENATOR BYRD: Please explain how many combat aircraft of each type the Defense Department must procure annually to support the operation of the Navy's carrier air wings at present and through the 1990's, noting the basis for requirements and current assumptions about attrition losses and retirements of aging aircraft.

ANSWER: The number of combat aircraft necessary to support the operation of the Navy's carrier air wings is consistent with the procurement plan contained in President Bush's revised budget submission for 1990. The basis for those requirements remains 15 carrier air wing (13 active/2 reserve), consisting of 80 aircraft each. Attrition numbers are adjusted annually and have been on the decrease for the past several years. Aircraft retirement is also a dynamic issue and age itself is no longer a singular reason for retiring any aircraft.

QUESTION: How would a reduction from the current level of thirteen active duty carrier air wings (in addition to two reserve air wings) to twelve wings affect the ability of the United States to meet current defense commitments around the world? Please identify those areas that would be most difficult to defend if the active duty carrier aviation forces were reduced from thirteen to twelve active air wings.

ANSWER: In a time when the relative value of the Navy is increasing because of decaying basing rights around the world, the impact would be significant. Without a reduction in overall commitments, the resultant impact on operational tempo and personnel retention could be catastrophic. It is difficult to identify which areas would be most difficult to defend without knowing just where the carriers would be and in what numbers. This could only be answered by JCS.

Question: What areas of the world do you expect to pose the greatest threats during the 1990's? Please discuss alternative weapon systems, such as land-based aircraft or weapon systems other than carrier-based planes, which could be used in these threat situations, noting the probable budgetary implications of a U.S. defense posture that relied less on sea-based tactical aviation.

Answer: Again, it is more appropriate for the Joint Chiefs to address this issue.

QUESTION: Why does the Navy now plan for each of its carrier air wings to contain 80 aircraft instead of 86 as previously planned? Please explain the origin and rational of this smaller air wing, which the Navy refers to as the "transitional air wing."

ANSWER: The transitional air wing is an accommodation to a shortage of medium attack (A-6) and carrier based fixed wing antisubmarine (S-3) aircraft and the fiscal climate of the 90's. The air wing will contain more striking power than today's conventional wings but will have four fewer A-6/A-12 aircraft and two fewer S-3 aircraft than we would like.

F-14

QUESTION: Under current plans, how many F-14A's are to be remanufactured as D versions in each year of the FY 1990-1994 period and at what program unit costs in each of these years? Please discuss the relative costs of remanufactured versus new production F-14D's, noting the annual rates of production these cost estimates assume and the annual rates of F-14A production since procurement began. Does your plan contemplate higher levels of procurement (remanufacture) than ever achieved in the history of the program? Is this realistic?

ANSWER: A total of 150 F-14As are planned for remanufacture to the F-14D configuration during the 1990-1994 period. The following table provides a comparison of costs for new and remanufactured F-14Ds in the original FY 1990/1991 President's Budget and the FY 1990/1991 revised President's Budget.

($M Then Year)

FY 1990/1991 President's Budget

	FY 1990	FY 1991
F-14D New (Qty)	(12)	(12)
(Recurring Unit Flyaway)	51.2	50.6
(Procurement Unit Cost)	71.4	69.8
F-14D Remanufacture (Qty)	(6)	(12)
(Recurring Unit Flyaway)	32.1	28.8
(Procurement Unit Cost)	61.8	42.5

FY 1990/1991 Revised President's Budget

	FY 1990	FY 1991
F-14 Remanufacture (Qty)	(6)	(12)
(Recurring Unit Flyaway)	60.6	43.8
(Procurement Unit Cost)	143.8*	73.2

The remanufacture rate under the current plan peaks at 65 per year which is higher than previously achieved. However, since remanufacture will be divided between Grumman and the Naval Aviation Depots and since the cost of the F-14D(R) is only about two-thirds that of a new F-14D, the plan is realistic in terms of production capacity and fiscal constraints. The remanufacture profile is:

FY	90	91	92	93	94
# Remanufacture	6	12	24	48	60

*This cost includes one-time costs for production line shut-down.

F-14 FIGHTER AIRCRAFT

QUESTION: Please compare the projected service lives of remanufactured F-14D's vs new-production F-14D's. Do you think it is as cost-effective to remanufacture existing F-14A's into D versions as it would be to procure new F-14D's, considering the relative service lives and operating costs of remanufactured vs new aircraft?

ANSWER: The F-14 airframe was designed with a 6000 hour service life. Fatigue testing has already extended that to about 7350 hours with 7500 hours expected in the near future. All remanufactured aircraft will have at least 3000 hours (approximately 10 years) of service life remaining. The remanufacture program was designed to maximize the use of available service life prior to the introduction of the follow-on fighter. New production would certainly provide airplanes with greater available service life. Given the world political and budgetary constraints we face, the remanufacture program is a cost-effective way to pace the threat until a follow-on fighter is delivered.

QUESTION: There have been press reports that re-engined F-14A's (known as the F-14A+ version), which are powered by the F-110 engine used in the F-14D version, have not yet been certified for carrier operation. Please discuss the nature of the problems that have delayed certification, noting the impact this may have on the F-14D program. When do you expect the F-14A+ version to be certified for carrier deployment?

ANSWER: Carrier certification of the F-14A+ with the F-110 engine was delayed pending resolution of higher than expected stresses at the engine mounted gear box during carrier arrested landings. These problems have been resolved and carrier suitability testing was successfully completed in May 1989. There will be no impact on the F-14D program.

A-6E ATTACK AIRCRAFT

QUESTION: How does the Navy plan to resolve the problems posed by current and projected shortages of fully operational A-6 attack planes? Please discuss the current status of the re-winging program and other activities to maintain necessary force levels in carrier-based attack aircraft pending deployment of significant number's of A-12 Advanced Tactical Aircraft in the late 1990's.

ANSWER: The Navy has sufficient A-6 aircraft to fill all of its carrier decks. The inventory shortage caused by the wing problem is absorbed by aggressive management of the assets available for the pipeline and training squadrons and the use of USMC A-6 assets. The A-6 re-winging program is on track with all grounded wing cracked aircraft scheduled to be inducted into the pipeline by the first quarter of FY 90. The Navy is also investigating programmatic actions which will accelerate the return to the fleet of repaired and upgraded capability A-6 aircraft.

V-22 OSPREY TILT-ROTOR AIRCRAFT

QUESTION: How much funding would be needed to continue this program in FY 1990 as a research-development effort, while the Defense Department and other agencies evaluate the merits of producing the aircraft for either military or civilian use? Please discuss the current status of FY 1989 funding for the program, noting the amounts provided to the contractors, their requests for additional funds to complete work they contracted to perform in FY 1989, and legal implications of terminating or revising these contracts.

ANSWER: To continue the program as a research and development only effort during FY 1990 would require $234.4 million. This removes all production related work from the scope of effort and items that would not be required in a R&D only program such as trainers, publications and other logistics support. FY 1989 funding status is as follows:

TYPE FUNDS	BUDGETED	OBLIGATED
RDT&E	$300.3M	$258.5M
APN	$333.9M	$333.8M

Of the funds listed as obligated above, the following represent funds that have been provided to the contractors:

TYPE FUNDS	OBLIGATED	OBLIGATED
RDT&E	$216.7M	Bell-Boeing
RDT&E	3.8M	Allison
APN	$283.0M	Bell-Boeing
APN	$ 50.8M	Allison

Bell-Boeing has asked for an additional $130M RDT&E funding in FY 1989. The government has not obligated additional funds to the contract because all effort contracted for through FY 1989 has been paid for and the government's liability is limited to the amount obligated.

QUESTION: What are the prospects of our foreign competitors producing and marketing a tilt-rotor aircraft during the next five or ten years?

ANSWER: The likelihood of foreign competitors producing and marketing a tilt-rotor aircraft in the next five to ten years is high. A European consortium known as EUROFAR has been formed to develop and produce tilt-rotor aircraft. EUROFAR is composed of Britain (Westland Helicopters); France

(Aerospatiale); Germany (MBB); Italy (Agusta); and Spain (CASA). They have the objective of flying a tilt-rotor demonstrator by 1993 with a production program commencing by the end of the century.

The EUROFAR demonstrator would probably be more advanced than the United States demonstrator, the XV-15, which first flew in 1978. EUROFAR has also recognized that a military application would best be developed first, ahead of a civil version. Although originally announced as a civil only program, EUROFAR is now conducting military surveys.

Japan has shown a strong interest in the tilt-rotor and to future participation in the V-22 Osprey program with a variant of that aircraft. There is no indication the Japanese would attempt to develop a tilt-rotor on their own but nothing prohibits them from joining the EUROFAR consortium. Additionally, a recent venture has been announced between Japan and a United States company to conduct studies and seek Japanese capital for a civil tilt-wing aircraft.

In summary, European and Japanese tilt-rotor development is five years or less behind the United States and the Europeans are likely to have a tilt-rotor demonstrator flying by 1993.

QUESTION: If the Marines do not get the V-22 in the early 1990's as previously planned, what would be the budgetary implications of procuring suitable alternative aircraft, such as CH-53 Sea Stallion and UH-60 Black Hawk helicopter?

ANSWER: The Secretary of Defense has chartered a study that will rigorously examine life cycle costs of the DOD-proposed CH-53E/CH-60 fleet, the MV-22 and several helicopter alternatives. We will provide you with a detailed cost comparison upon completion of the study.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

TERMINATION OF PHOENIX

QUESTION: Does the termination of the PHOENIX program indicate a change in naval defense strategy? If not, then what other missile systems are available in the Navy's inventory to satisfy our defense requirements?

ANSWER: The decision to reduce long-range missile procurement is based on our current judgment of the worldwide political situation and budget environment. Should the environment change suddenly, this decision may certainly be revisited. Other missile systems available are the AIM-9 SIDEWINDER and the AIM-7 SPARROW.

PHOENIX

QUESTION: In light of this statement, what is the justification for the reduction of nearly 4000 missiles in the PHOENIX inventory requirement?

ANSWER: The inventory requirement is based on an allocation of the projected threat to various weapons platforms. The inventory requirement fluctuates somewhat annually as threat assessments, operational doctrine and target allocations change. The computer generated inventory requirement may then be adjusted to produce an acquisition objective based on military judgment of risk versus affordability. The decision to reduce the acquisition objective for PHOENIX missiles is a low risk approach to reducing defense cost. We are also evaluating possible missile improvements to ensure that these missiles remain threat responsive throughout their expected service life.

QUESTION: Given that the Navy has qualified a second-source for the PHOENIX program, is the decision to terminate the program consistent with the Secretary of Defense's statement?

ANSWER: The risk of conflict requiring expenditure of large quantities of long-range air-to-air missiles in the near-term is judged to be low enough to permit a reduction in the acquisition of these missiles to achieve necessary reductions in defense costs. The second-source initiative has accomplished its objective by reducing the procurement cost of the PHOENIX missile. In our judgment, we will have procured a sufficient quantity of these weapons to meet foreseeable requirements after the FY-90 buy.

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

QUESTION: Admiral Dunleavy, has the Navy recently conducted an assessment of airlift requirements? If so, could you summarize the findings of that study for the Committee?

ANSWER: A Center for Naval Analyses (CNA) DON ORGANIC AIRLIFT STUDY 1986, CNR 122/August 1986 determined Navy wartime tactical airlift requirements. Those requirements were:

Aircraft Type	Requirement	Inventory	Shortfall
C-130F	29	7	22
C-9B	50	29	21
C-20	31	2	29
CT-39G	21	17	4
UC-12B	96	89	7

QUESTION: Does the Navy face a requirement to replace the C-131 aircraft stationed at the Naval Air Facility at Andrews Air Force Base?

ANSWER: Yes, the two aging aircraft at VR-48 must be replaced very soon in order to maintain medium tactical airlift capability.

QUESTION: What aircraft would meet the mission requirements for the transports based at Andrews?

ANSWER: A high speed, medium lift jet transport would meet the requirement. The aircraft must be equipped with high density seating. It must have a cargo door, a cargo handling system and the capability of conversion between cargo and passenger interiors.

QUESTION: Would the C-20 successfully meet the Navy's identified medium airlift requirements?

ANSWER: Yes.

QUESTIONS SUBMITTED BY SENATOR ROBERT W. KASTEN, JR.

AIRCRAFT COMBAT MANEUVERING INSTRUMENTATION #1

The Aircraft Combat Maneuvering Instrumentation System (ACMI) is a combat training system which we hope to see in Alaska and Wisconsin. Its my understanding that the contract for ACMI hardware was going to be awarded. However, one of the contractors who bid for it - is being looked at as part of the "Ill Wind" investigation.

Question: Could you tell me when we can expect this contract to be awarded?

Answer: On June 16, 1989, the Air Force awarded a $26.7 million firm-fixed-price contract to Kollsman, a division of Sequa Corporation, for the Alaska/Wisconsin ACMI acquisition. The Cubic Corporation, however, has a lawsuit pending in the United States District Court for the District of Columbia. The lawsuit, submitted under seal, seeks declaratory and injunctive relief against contract award. A hearing is scheduled for July 7, 1989. If the Court rules in favor of Cubic, the Air Force could be directed to terminate the contract with Kollsman. If this occurs, the Air Force would have to decide whether to reopen the previous competition or cancel the solicitation and recompete at a later date.

AIRCRAFT COMBAT MANEUVERING INSTRUMENTATION #2

My concern is that the funding for part of this program will expire at the end of this fiscal year. If we continue to delay the contract award we will lose our chance to help the Guard.

Question: What alternatives do we have if this occurs?

Answer: Since the ACMI contract was awarded to Kollsman on June 16, 1989, no alternatives need to be determined. However, as indicated in the Air Force's answer to insert SC-06-031, ACMI #1, if the Court finds in Cubic's favor, the Air Force could be directed to terminate the contract with Kollsman. If this occurs, the Air Force would have to decide whether to reopen the previous competition or cancel the solicitation and recompete at a later date. The status of funds along with other factors would be considered in the Air Force making its decision.

QUESTIONS SUBMITTED BY SENATOR ARLEN SPECTER

QUESTION: With respect to the V-22, we continue to hear comments about the narrow mission for the V-22, in the context of ship-to-shore movement during an amphibious operation. Would you please comment on the V-22 mission in general, and discuss its role in an amphibious operation?
ANSWER: [Clerk's Note: OSD (PANE) did not respond.]

QUESTION: We have been told that the proposed alternative to the V-22 requires the Marines to "double sling" the CH-53Es. What is meant by "double sling," and is it a tactically sound method of operation? Has it been tested and accepted by the Marine Corps?
ANSWER: [Clerk's Note: OSD (PANE) did not respond.]

QUESTION: Is it not true to say that if we cancel the V-22, and proceed with the proposed alternatives, we are taking a step backward, from a modernization standpoint, in terms of survivability and combat capability?
ANSWER: [Clerk's Note: OSD (PANE) did not respond.]

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will stand in recess until 9 a.m. tomorrow morning when we will receive an overview of the Air Force budget request from the Air Force Secretary and Chief of Staff. I thank you very much.

[Whereupon, at 11:50 a.m., Tuesday, June 6, the subcommittee was recessed, to reconvene at the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1990

THURSDAY, MAY 11, 1989

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:02 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Hollings, Johnston, Leahy, Bumpers, Harkin, Stevens, Garn, McClure, Kasten, D'Amato, and Rudman.

DEPARTMENT OF DEFENSE

STRATEGIC DEFENSE INITIATIVE PROGRAM

STATEMENT OF LT. GEN. GEORGE L. MONAHAN, JR., USAF, DIRECTOR, STRATEGIC DEFENSE INITIATIVE OFFICE

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. Good morning.

This morning, the subcommittee will examine the most ambitious, complex, and controversial Pentagon research program in recent history, the Strategic Defense Initiative.

SDI began as a vision of the path to a safer, more stable, nonnuclear world. And, for better or worse, technological, fiscal, and military realities have interfered with obtaining this goal.

However, great progress along this path has been made in the last 5½ years, but equally great challenges remain, and Congress and the executive branch must ask themselves whether the promise and potential of SDI continue to warrant the magnitude of annual budget resources provided in the past.

Since its inception, SDI has received $17 billion in scarce defense dollars, dollars which could have been funding other important military activities.

During years of both increasing and decreasing overall real growth in defense spending, SDI was allocated a remarkable cumulative real growth, and annual real growth in SDI's budget averaged 25 percent. The strongest SDI proponents may disagree; however, I think it is fair to say that, even with reductions, Congress has provided SDI with extremely robust funding since the program began.

In its revised fiscal year 1990 budget, SDI still is requesting 20 percent real growth above fiscal year 1989 appropriations.

SDI remains the largest defense research and development program, and the Pentagon still wants to spend $33 billion for SDI in fiscal years 1990 to 1994.

So, this year may be a historical juncture for the SDI. A new Congress and a new President may face fundamental decisions about SDI's future pace, cost, scope, and direction.

Last December, the Chairman of the Joint Chiefs of Staff stated that many questions remain unanswered about SDI despite its progress. Members of Congress and their constituents must ask themselves whether the Nation can afford SDI and whether the return on the investment will justify it.

These questions become more important to grapple with as the opportunity costs of pursuing a multibillion dollar research and development program escalate dramatically during a period of extreme fiscal constraint.

For its part, the administration is expected to issue soon a national security decision directive formalizing its overall goals and objectives for SDI. In the Pentagon, the defense acquisition board, on Monday, was to assess if the program's current structure and composition are consistent with these goals and objectives. However, the meeting was canceled. Simultaneously, the SDI program office is trying to adjust to the budget reductions imposed on it by the new administration.

Major SDI components appear to be changing, schedules are slipping, and budgetary allocations are being revised.

So, the subcommittee is very interested to learn how all these actions affect the overall SDI program and what their specific relationship is to SDI's fiscal year 1990 budget request now before us.

We also wish to hear a progress report on SDI activities in 1988 and on the program's cost, schedule, and technical status.

This morning's witness is the new Director of the Strategic Defense Initiative Organization, Air Force Lt. Gen. George L. Monahan, Jr. This is General Monahan's first congressional testimony since the revised fiscal year 1990 budget was submitted. It is also General Monahan's first appearance before the defense subcommittee in his capacity as the Program Director of SDI.

General, we welcome you. It was good to see you this morning before convening this hearing. We wish you the best.

Before you proceed, sir, Senator Stevens, do you have any statement?

OIL QUESTIONS

Senator STEVENS. No, Mr. Chairman. I regret being late again. It seems that oil questions still plague my office.

I am happy to see you again, General.

Thank you very much.

Senator INOUYE. Senator Garn, do you have any statement that you would care to make?

Senator GARN. No, Mr. Chairman, I have no statement. I doubt if anybody came to hear me testify this morning. [Laughter.]

Senator INOUYE. Senator Harkin.

Senator HARKIN. Mr. Chairman, just a couple of minutes, please.

STATEMENT OF SENATOR HARKIN

Senator **Harkin**. Again, I want to welcome General Monahan here.

TWENTY PERCENT INCREASE IN SDI PROGRAM

In looking over your prepared testimony, and reviewing the SDI program, quite frankly I am concerned about the 20-percent increase in a program that seems to be, at best, ill-defined and to have contradictory goals.

President Reagan implied that SDI would protect people. But now, it looks like what we are going to do is protect missiles.

President Reagan asked us to replace deterrence. But, in reality, SDI is now being sold to enhance deterrence.

SDI was supposed to force the Soviets to reduce offensive forces. But, in reality, the simplest Soviet countermeasure to SDI is to add more offensive missiles.

SDI was supposed to improve chances for arms control; but, in reality, SDI seems to be blocking meaningful START arms control talks.

SDI was supposed to be purely defensive; but the first fruits of SDI will be used for offensive, antisatellite weapons.

So, again, I ask: What are the goals of SDI? They keep shifting, it seems. Is it to protect people or to protect missiles? Is it to replace deterrence or to enhance deterrence?

I was disturbed by the first sentence in your testimony that SDI will continue toward deployment of a system. Does this mean that we have more of a commitment to deployment and less of a commitment to providing the technical information to decisionmakers to decide whether or not to go ahead with deployment in the 1990's?

Lastly, Mr. Chairman, if nothing else that I'd like to get out of serving on this subcommittee, I'd like to find out who comes up with the names. First we had the Bambi project of the 1950's and 1960's. Then we had Smart Rocks, and now we have Brilliant Pebbles.

Who comes up with these names—Smart Rocks and Brilliant Pebbles. I just want to find the one individual who is sitting someplace that coins these phrases.

Senator **Inouye**. He's in room B-29. [Laughter.]

Senator **Harkin**. Thank you, Mr. Chairman.

Senator **Stevens**. Stay tune for the "Golden Sands." [Laughter.]

Senator **Inouye**. Senator Bumpers, would you like to say something?

Senator **Bumpers**. I have no opening statement. Thank you, Mr. Chairman.

Senator **Inouye**. Senator Johnston.

Senator **Johnston**. No; thank you, Mr. Chairman.

Senator **Inouye**. Senator Hollings.

Senator **Hollings**. Mr. Chairman, I just came in listening to that litany.

They say that the psychiatrist is a fellow who goes to the burlesque show to look at the audience. [Laughter.]

B-2 COST

I didn't come here to listen to General Monahan. I came here to watch this audience of our committee members, who determine not to defend and who are wedded to mutually assured destruction, which is totally out of the whole cloth.

We saw that nonsense in the INF Treaty, when we banned conventional GLCM's, a realistic, credible defense. For the cost of some six B-2's, we could put some 3,000 GLCM's around, and they'd be credible, because they could hit that pitcher of water right there—indicating—at 1,500 miles.

Now, under that particular treaty, we are not supposed to be able to transfer the missiles that are banned themselves, but certainly the technology to our allies—this was debated out both in the Armed Services Committee and on the floor—we could certainly furnish the technology.

In this light, we can solve this mystery going on between the Germans. I wouldn't want a missile to be able to be shot from Charleston, SC, to land in Des Moines, IA.

Senator HARKIN. I wouldn't want that, either.

NUCLEAR WEAPONS

Senator HOLLINGS. And vice versa.

You can understand the Germans. You know, nuclear is aimed at the world. I never heard of a limited nuclear war, but that is the mentality that still persists.

My point here is there is no inbetween. There is no World War II that you and I went through, Mr. Chairman. There isn't going to be any MLR, or mean line of resistance. That is the front porch today. You are either going to be a guerrilla, like the Vietcong out there, who did not have a helicopter, or an Osprey, or a tank, or any of those things, or a battleship to back up. Yet they beat the hell out of us.

You're going to fight that type of war, or you are going to go into space, where General Monahan is dedicated.

The answer to the distinguished Senator from Iowa's questions is all of the above. We don't know whether we can deploy, whether it is realistic or economically feasible. But Gorbachev thinks it works, and now we have the very auspicious aviation groups that have now studied it and say there is no real bar to it.

I have heard the Senator from Ohio wax long and heavy on this, Senator Glenn, that you just couldn't even get the software for this kind of thing. Well, that's false. You can get the software. The technology is sound. The question is to move along in this particular light.

When they give me the expenses about *x* trillion, or $2 trillion, we will and are committed to spend $2 trillion between now and the year 2000 on strategic offense, which is absolutely worthless.

When are we going to start firing ICBM's or even LANCE's? There is a wonderful initiative that we have going on right now this morning, a launching in space, which will be stopped unless we can access the space.

Our access, I say to the Senator from Ohio, will be eliminated if we don't begin, yes, killer satellites, because they've got them. You know that and I know that.

So what are we going to do, sit around and trade? Heavens above. We have to move with the technology.

General Monahan, you are right on target. Keep us up to date. We are not scientists on this Committee, but we are realists. The next engagement is either going to be that or the guerrilla type—in Vietnam or in space.

There are not going to be all of these armies that we have laying around, standing off at each other and firing away. That day has long since gone, now. We have to put our efforts on the training, discipline, and actual manpower on the one hand and in space on the other hand.

I don't understand the strategy of those who continually oppose learning something that the Russians believe very definitely in. They've spent $100 billion in this field, and they are ahead of us in space.

I want this Committee to put their shoulders to the wheel in a bipartisan fashion and let's go to work and play catchup ball.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Rudman, do you have anything?

Senator RUDMAN. Thank you, Mr. Chairman. I don't have anything.

I just enjoyed listening to Senator Hollings.

Senator INOUYE. Senator Kasten.

Senator KASTEN. Nothing now, Mr. Chairman.

Senator INOUYE. General Monahan, before you begin, I think I should point out that you have before you the most senior members of the Appropriations Committee and, for that matter, the U.S. Senate. In all the weeks and months that I have been presiding over the subcommittee, you don't happen to have 12 members present at hearings. Yesterday we had only two. Two members were here.

You have a full press table, but no cameras. I don't know what happened to them. But you have nine Senators.

General Monahan, the floor is yours, sir.

STRATEGIC DEFENSE SYSTEM

General MONAHAN. Thank you very much, Mr. Chairman. It is my pleasure to be here today.

As you mentioned earlier, it is the first appearance that I have had before this Committee in this capacity. I have had the pleasure of appearing in previous years in other jobs that I have had.

This morning, I would like, first of all, to submit my statement for the record. Then I have a presentation which summarizes the statement and brings out some of the major points of the statement and also helps to describe the efforts that we have been involved in over the past couple of months as we revised the President's budget.

So I would like to explain the various elements, the building blocks of the Strategic Defense System, both ground-based and space-based, which, of course, has as its objective the destruction of ballistic missiles, and none other. I would also like to describe a little bit of the alphabet soup, and then our approach to the revision of the budget.

I would like to thank some of the Committee members and their staffs who have assisted substantially in preparation for this hearing this morning. Without them and the work that they do, we really could not be able to give this kind of presentation to you.

I have prepared also a handout that I believe all of you have. You may follow along in there while, at the same time, we put our charts upon the screen.

In order to be near the microphone, I will just sit right here and describe the various charts as they come up.

Why don't you put up the first chart, Pat.

OUTLINE

—Program revision
—Phase I SDS
—Alternative architecture
—Summary

NUMBER OF PEOPLE WORKING ON PROGRAM

First of all, I would like to point out that there are quite a few people in the United States working on the program, as of the present time, about 28,000. As you can see, a number of those are working for the Department of Defense, for the Army and the Air Force, and then quite a few people who are mostly contractors.

We have universities involved in the program, we have Department of Energy laboratories, other defense agencies, such as the Defense Nuclear Agency, plus quite a few contractors from around the country.

Next chart, please.

SECDEF TESTIMONY

The goal of the Strategic Defense Initiative remains unchanged. We will continue to pursue the general framework of both space- and ground-based defenses while providing the flexibility to adjust the specific deployment schedule as evolving technology is tested and proven. A restructured program would continue toward deployment of a system that will meet the requirements of phase I by focusing on evaluating the potential of the most rapidly advancing technologies such as Brilliant Pebbles.

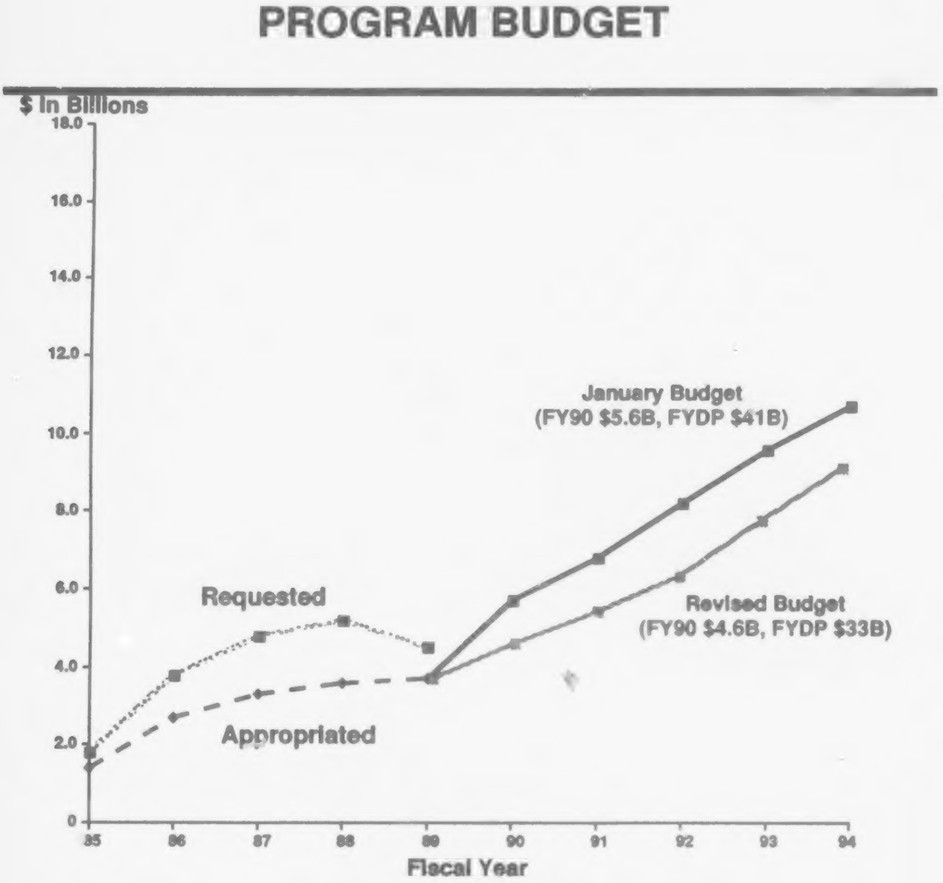
Richard B. Cheney, Secretary of Defense, before the House Armed Services Committee, April 25, 1989.

GUIDANCE IN PROGRAM

In structuring the program, we have used this kind of guidance. This guidance comes from Mr. Cheney's testimony before the House Armed Services Committee here a little over a month ago.

In the revision of the program, he says, as you see, that the goals of the program are going to remain unchanged; that is, we'll pursue both space-based and ground-based segments of the program. We have to remain flexible, however, and take advantage of new technology as it evolves. The requirements for the first phase of the program were approved by the Joint Chiefs of Staff. That is a requirement that the Joint Chiefs of Staff consider it to have the minimum acceptable utility that will still stand, but we will look at the potential of new and emerging technology, such as Brilliant Pebbles.

So that is the guidance under which we have restructured the program.


PROGRAM BUDGET

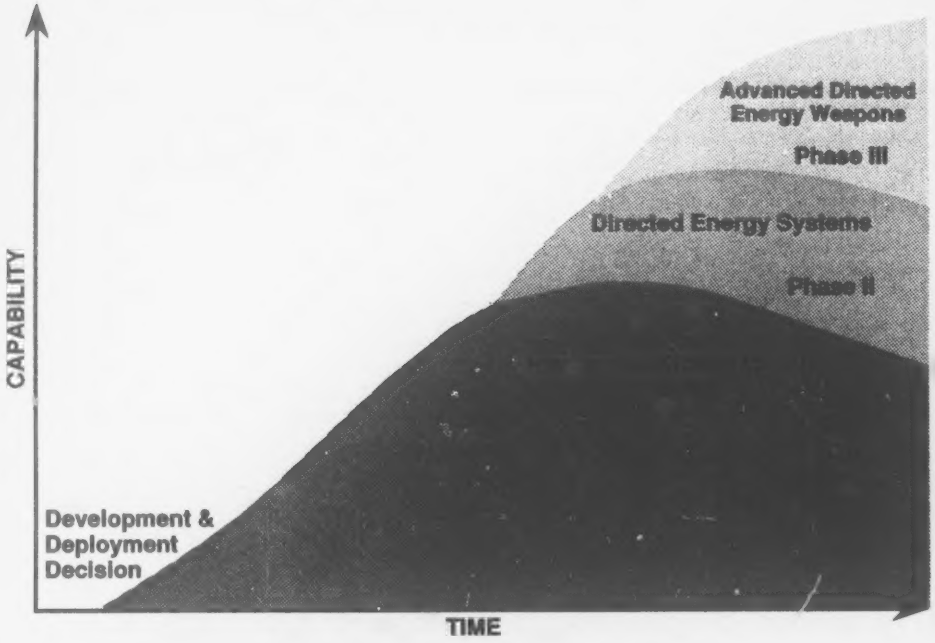
BUDGET

The budget and what the revision reflects is shown there. As you can see, on the right hand side of the chart, the January budget, which was the original President's budget, is $5.6 billion for fiscal year 1990, with a total of about $41 billion over the period of the next 5 years.

The revised budget is, as you can see, $4.6 billion, with $33 billion over the 5-year period. I think it is quite evident from the differences between those two programs that we had to do considerable revision.

May I have the next chart, please.

THE PATH TO "THOROUGHLY RELIABLE" DEFENSES



THREE PHASES OF PURCHASE

The program will continue to be pursued in two or three phases.

The first phase, that is shown there, says sensors and kinetic energy interceptors. That phase of the program takes advantage of the technology that is most closely at hand and could be deployed the earliest.

Because of obsolescence, as kinetic energy weapons perhaps lose some of their capability and effectiveness, then we go into directed energy weapons in the second phase of the program, and into more advanced type weapons in the third phase.

So that kind of philosophy still stands with the program.

PROGRAM EMPHASIS

Proceed with BSTS; delay FSD 6 months; IOC 1 year.

Pursue activities that support national development strategy decision in three to four years: Maintain current ground-based architecture but with funding/schedule adjustments and pursue Brilliant Pebbles or a possible alternative or revision to current space-based architecture. Current space-based architecture may change.

Robustly fund activities (simulations, experiments) which address operational and technical tradeoffs.

Continue robust discrimination, survivability, and countermeasures program.

Concentrated effort on technical risk and cost reduction.

Maintain kinetic and directed energy options.

Comply with the ABM Treaty limits on testing.

TRACKING SYSTEM SATELLITE

This is how we are structured for translating Mr. Cheney's guidance to us into some specific actions.

First of all, BSTS—and this is a little bit of the alphabet soup, which I will describe more of later—that's the boost surveillance and tracking system—that's a satellite that replaces the defense support program satellite, that now gives threat warning and attack assessment. It is a satellite that has dual roles. It has an SDI role and it also has a role that is being fulfilled today by DSP.

BSTS will be delayed 6 months and its operational capability delayed by 1 year.

But after that, then our philosophy is to pursue a strategy here within the program that would allow us to make national decisions regarding deployment of a system in a 3- to 4-year time period. So the emphasis has to be on technology and getting ready to make those kinds of decisions.

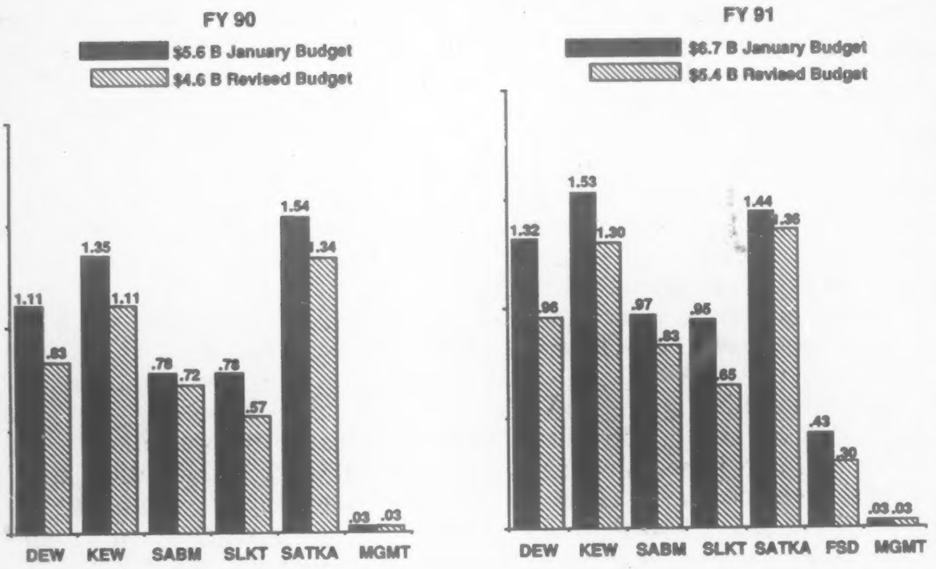
We are satisfied with the ground-based architecture, as we know it today, and I will describe that more in just a moment.

In the space-based architecture, however, we might pursue the Brilliant Pebbles concept. We're going to take a look at that and I'll describe more of the details of that in just a moment also.

We will continue to robustly fund the activities that allow us to do the up-front work. Here I am talking specifically about the national test bed. I'll talk more about that. We'll work hard on survivability, discrimination, and countermeasures; work on cost reduction, technical risk reduction and maintain our options for both kinetic and directed energy weapons. During this period of time over the next 4 years, we'll comply with the ABM Treaty limits on testing; that is, the restrictive interpretation of the treaty.

FY 90 - 91 SDIO BUDGET

Program Elements ($ In Billions)



Now, then, if I take the various program elements—and I don't want to dwell on this chart—I'd just like to get this in the record—they would be revised in the following manner:

Next chart, please.

Top Technical Risk and Cost Reduction Efforts

Technical risk: Phenomenology and targets—discrimination; radiation hardening—focal plane arrays, signal data processors, and optics; space power—reduce size and survivable; survivability—hardened components and architecture; communications—operate through nuclear environment; and system integration—sensor to weapon handover and system level command and control.

Cost reduction: Optics—beryllium and glass mirrors and production process enhancements; focal plane arrays—increased yield and process controls; signal processing—increased yield and qualified manufacturing lines; space power—automated manufacturing of solar cells; launch—efficient means of deployment; materials and structures—lightweight, durable, and high strength; and alternative space based architectures.

TECHNICAL RISKS

Let me just talk now a little bit more specifically about what are the technical risk reduction efforts and the cost reduction efforts that we need to pursue over the next few years.

There is one in phenomenology and targets, and that is the ability of the sensors within the system to distinguish targets against various backgrounds, against an Earth background, against a space background, against a rural background, et cetera. Other challenges include radiation hardening, focal planes; reducing the size of space power components. Survivability needs to be achieved through hardening of components and through the type of architecture of the system we put up there. Communications—you have to be able to operate in a nuclear environment. Then we have to work the problems of system integration with the command and control system.

In the area of cost reduction, I think we have some excellent opportunities. One is in optics themselves. Obviously, in a system such as this, we have to place great reliance on optical systems—beryllium and glass mirrors and how to produce those more quickly. Focal plane arrays—we have to be able to get the cost of the detectors, which we'll use by the many millions within the program, down to levels that are about 10 times cheaper than what they have been in the past. I think we can do that.

Signal processing—we have to process a lot of data. We need to find a way to get mass production more efficiently done in this arena. We have to look at better ways of producing solar cells because of the large number of objects we'll have to put up in space. With launch systems, we'd like to get the cost per pound of what it takes to put something into orbit these days down to a much lower number than it takes at the present time.

We need a lot of work on materials and in alternative space based architectures, which look at Brilliant Pebbles.

Let's go to the next chart.

National Test Bed

The National Test Bed provides capability to develop, test, and verify Strategic Defense System concepts and architectures.

It also provides nationwide network of test ranges, military organizations, laboratories and industrial centers tied to the 450,000 square foot national test facility (NTF) at Colorado Springs: Unique ability to perform full range of simulations, test analysis, and command center development; permits system hardware test definition reducing risk and cost; and integrates real time experimental data into simulations to verify predicted system performance.

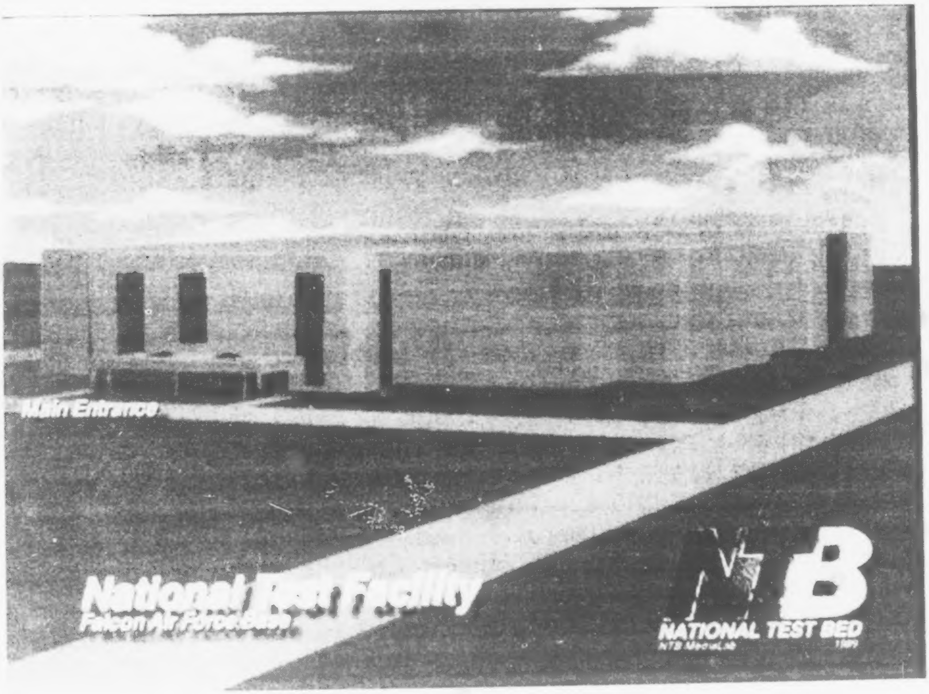
NATIONAL TEST BED

I want to emphasize something I call the National Test Bed.

Despite the fact that we suffered a reduction in funding of $1 billion, from $5.6 billion to $4.6 billion, there are certain things that we need to continue to robustly fund, and this is one of them. That is the National Test Bed, and it is headquartered at Colorado Springs.

This allows us to look at, to trade off, in a simulated setting, operational and technical characteristics of the system.

Next chart, please.


Main Entrance
National Test Facility
Falcon Air Force Base
NTB
NATIONAL TEST BED
NTB MediaLab

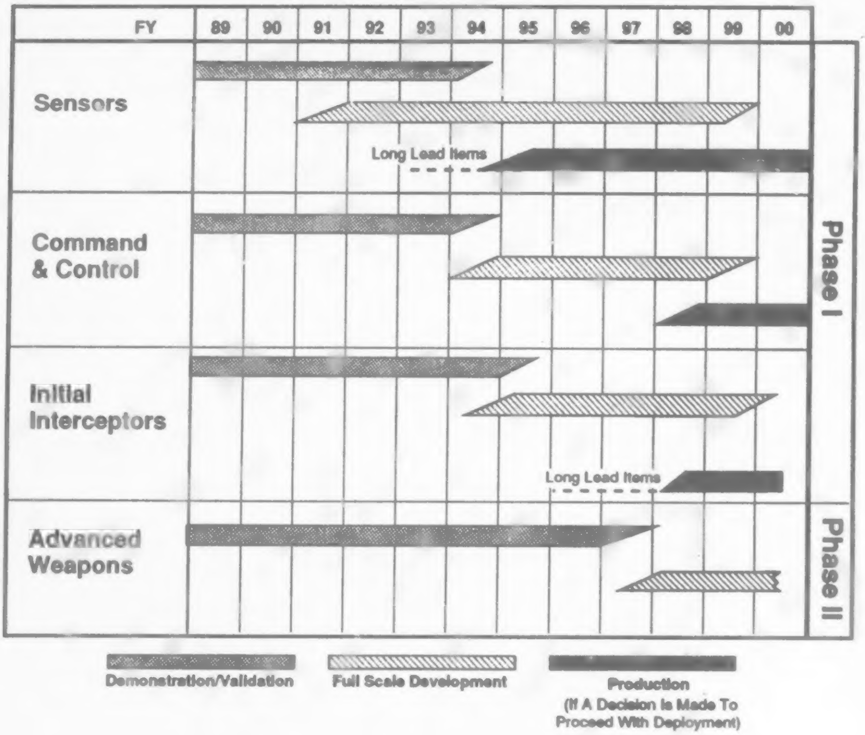
FACILITY UNDER CONSTRUCTION

This shows a picture of the facility that is under construction at the present time. At the present time, we have it operating at about 77 percent of capacity in temporary facilities. Next spring, when we get to our new facilities, we will be up and running at 100 percent.

So that is one item that we would robustly fund, even as we reduce.

Next chart, please.

SDS PROGRAM SCHEDULE



EVENTS THAT COULD OCCUR IN PROGRAM

Overall, let me just talk about the possible schedules and possible events that could occur in the program.

Phase I of the program has three major elements to it: Sensors, the command and control system, and then the initial interceptors, the kinetic energy interceptors.

The sensors are the first that will be available. You'll notice the blue line up there under sensors. That says full scale development.

In 1991, we could start and we plan to start full scale development of the boost surveillance and tracking system sensor. That's the one that replaces the defense support program sensor that is in orbit at the present time.

The remaining sensors in the program wouldn't start in the full scale development period until about 1994.

The command and control system would be ready for full scale development in about 1994, as would the initial space-based and ground-based interceptors, be they Brilliant Pebbles or a different version.

You can see, then, that initial production of the command and control system and of the interceptors themselves would occur in this scheme out in about 1998, and in the period of about 1999 we would begin deployment of those various elements of the system.

SYSTEM EXPLANATION

Let me get into just a little bit of the alphabet soup and explain a couple of things about the system.

SDS PHASE ONE PROGRAM

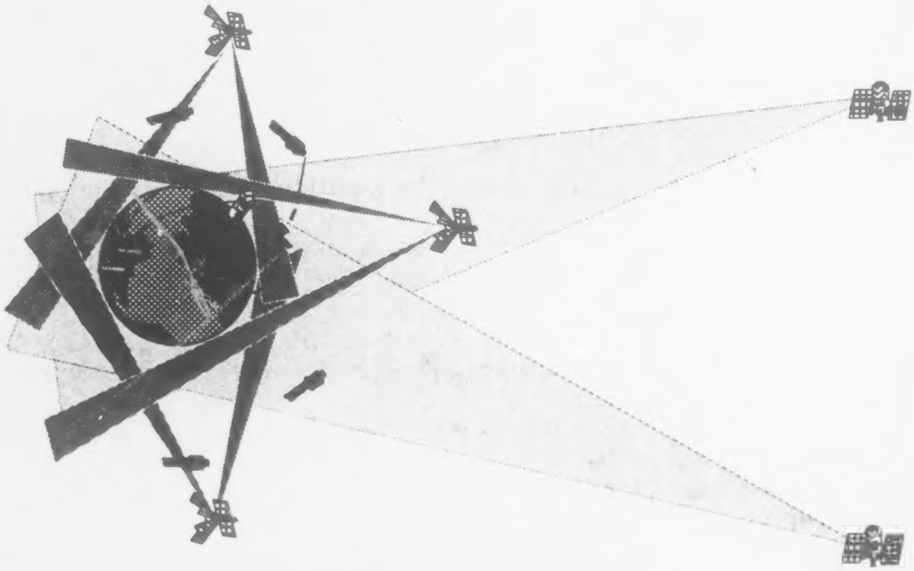
Major elements: BSTS—boost surveillance and tracking system; SSTS—space surveillance and tracking system; GSTS—ground-based surveillance and tracking system; GBR—Ground based radar (pending); CC—command center; GBI—ground-based interceptor; and SBI—space-based interceptor.

SSTS, GSTS, BSTS, GBR

The first four items listed there—the BSTS, SSTS, GSTS, and the GBR—are the sensors within the system. Then there is a command center, and the GBI and SBI are the interceptors in phase I of the system.

Let's go to the next chart, please.

PHASE ONE ARCHITECTURE



WORKINGS OF SATELLITES

Let me try to explain how some of these sensors work.

The satellites that you see way out there to the right—indicating—are called the BSTS. That's the boost surveillance and tracking system that I mentioned which replaces the DSP. Those satellites are in geosynchronous orbit, 23,000 miles above the Earth. Each one of them covers about one-half of the Earth.

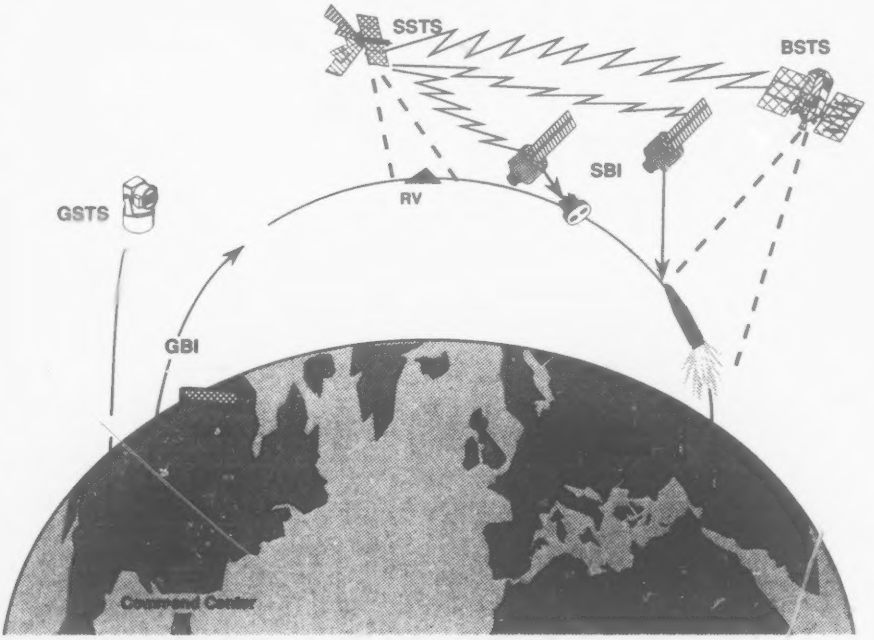
The function that they do for SDI, as well as for our strategic forces worldwide today, is to detect the initial launch of an ICBM or other missiles. They are able to see the very, very bright plume that comes from a missile.

So it is the bell-ringer satellite. It gives the gross estimate that something has been launched, and can tell, in general terms, where it was launched from, and, in general terms, to where it is going.

The next satellite closer in, that shows the orange beams coming out from it, is the space surveillance and tracking system, or the SSTS. Notice that the SSTS looks in the area of space very near the Earth, or near the Earth's limb. Because of that, it doesn't have to look at the Earth background. But its job is, after having been cued by the boost surveillance and tracking system, is to be able to detect the post-boost vehicles and then clusters of reentry vehicles, along with penetration aids and decoys.

Let's go to the next chart.

SDS PHASE ONE ARCHITECTURE



MORE DETAIL

Let's just bring this in a little bit closer to Earth, so that I can explain things in a little bit more detail.

I just explained the BSTS and the SSTS. Now you see something there called SBI. That is the space-based interceptor, and shown pictorially is a carrier vehicle, which houses 10 space-based interceptors.

Through communication with the BSTS and the SSTS, the space-based interceptor is able to attack boosters and post-boost vehicles. Note the booster in red, and a little bit further along the trajectory there is a post-boost vehicle, upon which the reentry vehicles are mounted.

So the space-based interceptor's primary job is to attack the boosters and post-boost vehicles, and hopefully he'll have some capability also to attack the reentry vehicles.

If you look a little over to the left of the chart, you will see the GSTS. That is the ground surveillance and tracking system. That is a suborbital probe. As it is cued by the SSTS that there is a cluster of reentry vehicles and decoys on the way, the GSTS is launched, then, to get a finer grained picture of just what that cluster looks like, so it can hand off to the ground-based interceptor, the GBI, where the targets are and provide to the targets the necessary fire control commands.

Also notice the GBR. GBR is the ground-based radar. Ground-based radar is the element of the system that can take the finest grained look at what a raid would look like as it approached our country.

The ground-based radar will have excellent capability to discriminate between reentry vehicles and decoys. So it plays a role that is supplemented by the ground surveillance and tracking system.

This is what the basis of the Strategic Defense System, phase I, looks like. It is just those elements right there, and it has one mission and one mission only, and that is to destroy the boosters, post-boost vehicles, and reentry vehicles.

Next chart, please.

CANDIDATE FOLLOW-ON ELEMENTS

Element name	Key functions
HEDI—high endoatmospheric defense interceptor	Destruction of RV's after atmospheric reentry.
NPB—neutral particle beam	Disabling of boosters, PBV's, RV's, and ASAT's; interactive discrimination.
SBL—space-based laser	Destruction of boosters, PBV's and ASAT's; interactive discrimination.
GBL—ground-based laser	Destruction of boosters, PBV's and ASAT's; interactive discrimination.

BEYOND PHASE I

Looking a little bit into the future, beyond phase I—I just described phase I—in the future we would have more advanced interceptors. The command and control system and the sensors themselves would remain about the same. But the interceptor or kill mechanism part of the system would change.

Here is what they are.

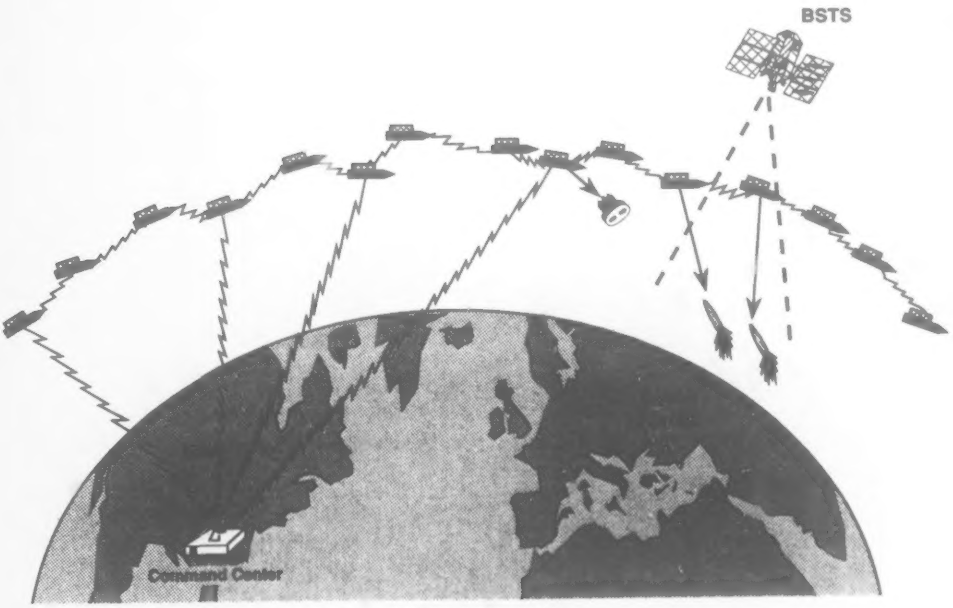
One is the high endoatmospheric defense interceptor that we call the HEDI. That, again, is a kinetic kill vehicle, but it destroys reentry vehicles after they have entered the atmosphere.

The next three items are what we call directed energy systems—the neutral particle beam, the space-based laser, and a ground-based laser. Those three systems have the capability to destroy, to attack and destroy boosters, post-boost vehicles, reentry vehicles, and they just have a natural ability to destroy antisatellite weapons that might be attacking us, and to help out in the discrimination problem.

ALTERNATIVE ARCHITECTURES

Let me talk a little bit now about one of the alternative architectures for the space-based portion of the system.

SDS ALTERNATIVE ARCHITECTURE



UNCLASSIFIED

BRILLIANT PEBBLES

If I take that space-based interceptor and the carrier vehicle that it was in, I mentioned that the carrier vehicle held 10 interceptors and had to communicate with the SST's and BSTS satellites in order to function.

Well, in the new concept, which we call Brilliant Pebbles, pictorially demonstrated here, each one of those spacecraft that you see is a pebble itself. It is an interceptor, contained unto itself, and has the capability of detecting launches of ballistic missiles and communicating with the ground and asking for permission to fire, and then is able to attack the boosters and then the postboost vehicles.

I want to describe this in a little bit more detail, but conceptually this is what it is. There is less dependence here, because in one mode of operation, the Brilliant Pebbles can communicate through each other with someone on the ground, and, therefore, have less reliance upon other sensors and other satellites. So survivability is enhanced.

The Brilliant Pebbles, of course, would be distributed in the thousands, and by themselves, in a singlet type concept, probably about 250 to 300 kilometers apart. Each one would be able to see a certain part of the Earth's surface. Any part of the Earth's surface would probably be observed by about four or five pebbles at one time.

Next chart.

Brilliant Pebbles Concept—SBI

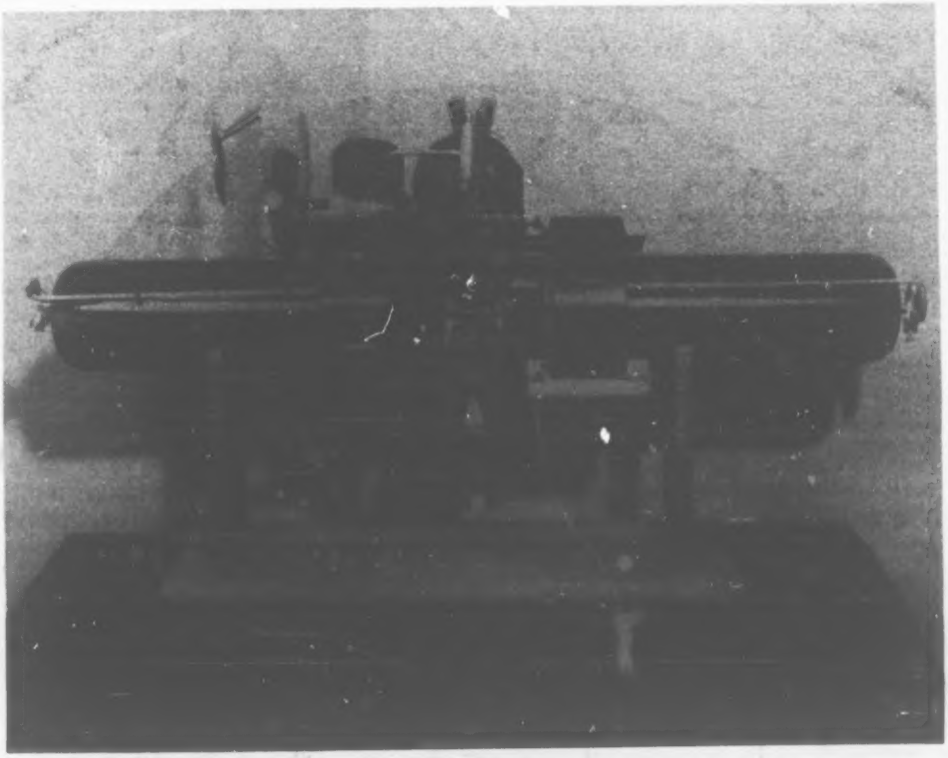
Functions: Destruction of boosters and PBV's, surveillance and target acquisition, and laser 2-way communications.

Characteristics: Interceptor orbits in protective shell/life jacket, low cost/light weight (88 pounds), highly survivable singlets, and hit-to-kill.

PEBBLES IN LIFE-JACKET

We can go right through this chart. It describes how the pebbles are in a life-jacket, which I will describe just a little bit more in a moment. They are fairly light-weight, 88 pounds.

Let's go to the next chart.



EXPLANATION OF MODEL

This is just the picture of a model here. If I start way over on the right-hand side, at this end [indicating], that is the laser radar out there, on top. You'll notice the star tracker.

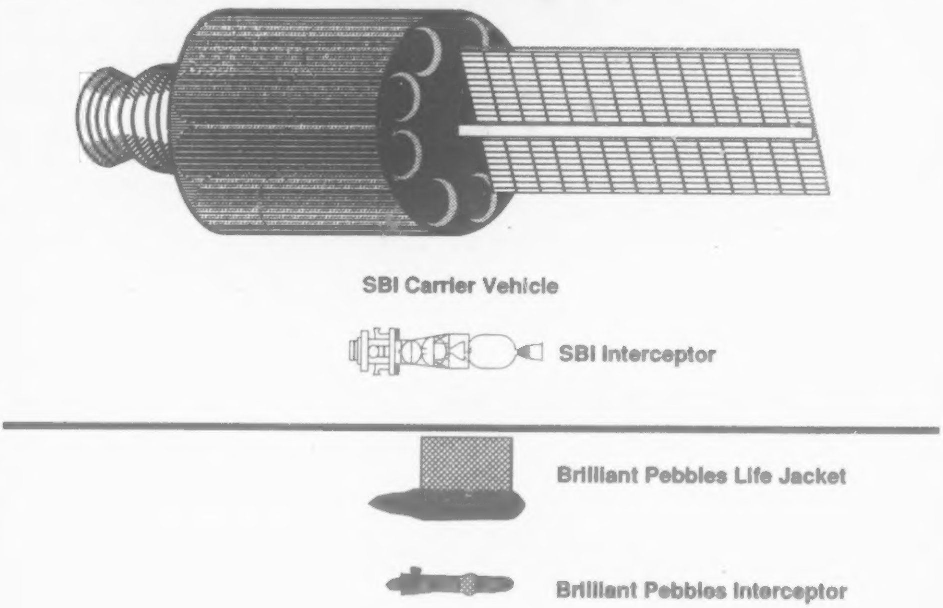
The pebble itself has four sensors on board. One is a star tracker, such that each pebble knows where it is and where it is going at all times.

Also it has an infrared sensor, an ultraviolet sensor, and, finally, the laser radar.

In the middle, you will note the divert nozzles. Those are the devices that control the attitude and the direction in which the interceptor flies; the two fuel tanks, one before the center and one after the center; and at the rear end, the attitude control thrusters, small thrusters back there [indicating]. Then of course, there is an axial thruster that gives the device its velocity.

Let's go to the next chart.

COMPARISON SBI & BRILLIANT PEBBLES



CHEAPER CONCEPT

Here is what it is intended to replace. This is why, hopefully, it should be a cheaper concept than the conventional concept.

On top, you can see the carrier vehicle in a conventional system and then the space-based interceptors themselves. That space-based interceptor on top has a lot of reliance on a carrier vehicle. It needs to talk to the carrier vehicle. It needs to get directions from the carrier vehicle, and then it does not have the autonomy that is resident in the smaller system of the Brilliant Pebble. The pebble itself, then, weighs about 88 pounds, and is housed in a rather simple life-jacket that provides primarily electricity.

SPACE BASED INTERCEPTOR

Senator BUMPERS. General, what is that shutter at the end of the space-based interceptor at the top, sticking out at the rear there?

General **MONAHAN**. Which is that?

Senator **BUMPERS**. It looks like a solar panel or a shutter or something.

General **MONAHAN**. Oh, yes; indeed. That is a solar panel.

BRILLIANT PEBBLES PROGRAM PLAN

Brilliant Pebbles is potentially a valuable contributor to a strategic defense system—possibly the centerpiece of SDI and low cost potential is featured. But in very early stage of research and development.

DOD will perform an in-depth evaluation—independent review(s) and also, red team/blue team.

DOD will develop a bottoms up cost estimate (defense acquisition board quality-milestone I)—Air Force cost estimate, independent review by SDIO agent, and DOD Cost Analysis Improvement Group (CAIG) evaluation.

STRATEGIC DEFENSE SYSTEM

So, what about Brilliant Pebbles? Well, we think it is potentially a very valuable contributor to the program. But it's very early in the development stage, and, of course, it could some day become the centerpiece of a Strategic Defense System. It does have the potential for a relatively low cost. I think it is in the very, very early stages of research and development.

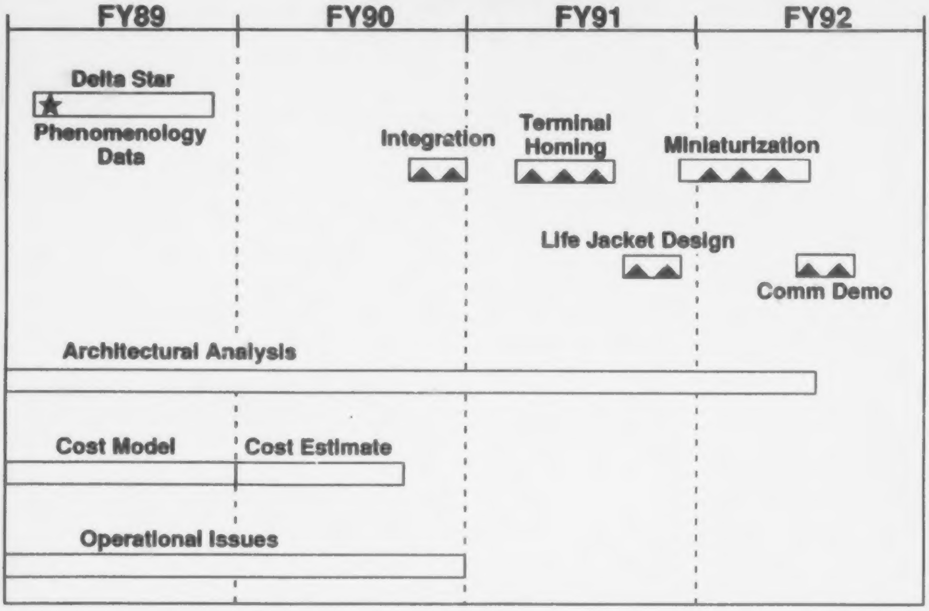
This summer, we are going to perform an in-depth evaluation of this concept. Two groups of folks: The Defense Science Board and the JASONS will undertake independent reviews.

We will also do a red team/blue team effort in looking at this concept, and war-game it a little bit, if you will. Then we need to have better cost estimates.

So we are going to do an in-depth, bottoms-up cost estimate also this summer, with the Air Force conducting that. Then we will have independent review of that cost estimate.

Following that, then we will make necessary decisions about whether or not to proceed further with the Brilliant Pebbles.

NOTIONAL BRILLIANT PEBBLES DEVELOPMENT



The next chart is just a notional test plan that we would follow over the period of the next 2 or 3 years.

Now this test plan itself will not answer the questions about should we deploy Brilliant Pebbles. What it will do is get us into a position in which we could decide whether or not to go into full-scale development with Brilliant Pebbles.

You'll note on there a total of 12 flight tests. All of those tests are designed such that they comply with the ABM Treaty.

The three tests on top—the integration, the terminal homing, and the miniaturization—are specifically designed that way. They are suborbital tests. They don't go into orbit. They won't be thrusted. In other words, we'll get the necessary velocity to do a kinetic kill just by virtue of the fact that it has been thrusted and is reentering the atmosphere.

The life jacket design test and the Comm Demo will be orbital tests, but they will not contain live space-based or Brilliant Pebble interceptors. Therefore, they should be treaty-compliant also.

The treaty compliance review group is looking at this plan at the present time to insure that it is indeed a treaty-compliant path that is followed. But we have structured it on the basis of past efforts in putting together our tests that we knew could be done in a treaty-compliant way within a restrictive interpretation of the treaty. We are quite confident that this can be also. If not, then we would have to alter this particular plan.

So, that is the plan. Should we, this fall, after review by the groups that I mentioned, decide that Brilliant Pebbles makes sense and is a good way to go, then this is the sort of plan that, at the present time, we would plan to follow in pursuit of the space-based portion of the architecture.

May I have the next chart.

SUMMARY

Orient program to support national strategy decision.
Evaluate Brilliant Pebbles and space based alternatives.
Ongoing emphasis on risk reduction.
Enhance cost reduction efforts in producibility.
Maintain kinetic and directed energy options.
Continue robust discrimination, survivability, and countermeasures programs.
Maximum utilization of the national test bed.

Finally, let me just summarize.

I hope that what we have done here over the past couple of months is put together a program which supports the national strategy decision or deployment decision in a period of about 3 to 4 years. We're going to look at the Brilliant Pebbles, we're going to look at space-based alternatives, we're going to put our emphasis on risk reduction and on cost reduction. We're going to maintain our options on both the kinetic energy and the directed energy arenas, and continue with our robust programs and discrimination survivability and countermeasures.

As I mentioned earlier, I think one of the keys to doing that is continuing the robust funding of the National Test Bed, and that is what we plan to do as we put our budgets together.

PREPARED STATEMENT

Mr. Chairman, that concludes the presentation which I believe summarizes the statement that we have submitted. At this time, I would be happy to answer any of your questions.

[The statement follows:]

STATEMENT OF LT. GEN. GOERGE L. MONAHAN

Mr. Chairman, thank you for the opportunity to appear before this subcommittee today to testify in support of the Strategic Defense Initiative (SDI) budget request.

Secretary of Defense Cheney submitted to Congress the fiscal years 1990/91 amended budget request for the Department of Defense on April 25, 1989. The request for the SDI program for fiscal year 1990 is $4.6 billion and $5.4 billion for fiscal year 1991; a billion dollar reduction from the original fiscal year 1990 request and a billion three hundred million from fiscal year 1991 request.

As the Secretary has stated, the goal of the Strategic Defense Initiative remains unchanged. In fiscal year 1990 and 1991 we will continue to pursue the general framework of both space- and ground-based defenses while providing the flexibility to adjust the specific deployment schedule as evolving technology is tested and proven. SDI will continue toward deployment of a system that will meet the requirements of Phase I by focusing on evaluating the potential of the most rapidly advancing technologies such as Brilliant Pebbles. To pursue our objectives, we will continue to maintain program balance: a balance between technology base research and validation experiments; between boost phase, midcourse, and terminal phase programs, and between mature and advanced technologies. Specifically, we will complete planned, ABM Treaty compliant, flight tests supporting the ground-based and space-based interceptors and space-based sensor experiments; provide for a competitive analysis and evaluation of ground-based and space-based elements of the system architecture; and provide for an aggressive program to evaluate concepts, such as Brilliant Pebbles.

One of our primary programmatic objectives is to continue to emphasize the importance of cost reduction and enhanced producibility techniques in our research efforts. SDIO will continue to sponsor research that will consider reducing the costs of systems both through cost performance tradeoffs and the infusion of emerging technology. Two of our ultimate goals are a properly balanced architecture that allocates functions in the most economical way and an industry that efficiently adds value to its products using the widest technology and capital base.

One example of our effort to economize the SDS architecture involves Brilliant Pebbles. Brilliant Pebbles is a concept for an alternative space-based element which is described in more detail later. The Brilliant Pebbles concept emphasizes low-cost, miniaturized components, and could potentially reduce the cost of the overall SDS architecture by a considerable amount. I stress "potentially," because the concept is very early in the research phase and still embodies many operational and technical unknowns. To address these unknowns, we are sponsoring several cost and feasibility study efforts this year to determine the viability of this concept.

An example of our efforts to exploit the capabilities of high innovation in industry is the Inertial Measurement Unit (IMU), a device used for navigation. Ten years ago an IMU was the size of a bread box and cost approximately $70,000. By the fall of 1988, SDI program research reduced the size of the IMU to that of a softball for approximately $10,000 a piece. We have continued to improve and the IMU is now approximately the size of a tennis ball and costs $5,000 a piece. Miniaturization techniques and development of low-cost alternatives are driving the SDI program to produce less-expensive strategic defense options.

The classified Report to Congress on the SDI Program was submitted to the Congress on January 19, 1989, and the unclassified version on March 14, 1989. This report describes in detail the content of the total SDI research program. Therefore, with your indulgence, I would like to take a few minutes to highlight some very important points from the report. First, the SDI research program seeks to develop both mature and advanced defense technologies. For example, kinetic energy systems which would be deployed in the initial phase of a defensive system and directed energy weapons (lasers, particle beams) are being researched with equal dedication. Second, the advanced technologies are integral to the program's success in countering potential Soviet responses to a deployed Strategic Defense System (SDS).

I would like to review for this Committee the major elements which could make up an effective defensive system. The hardware specifications for an initial defensive system, Phase I, are not absolutely fixed. Continued progress in the demonstration/validation phase or in technology development may result in substitutions or additions of elements.

BOOST PHASE SENSORS

BOOST SURVEILLANCE AND TRACKING SYSTEM (BSTS):

BSTS would be a missile launch warning system that detects launches, identifies boosters, and predicts booster tracks of attacking ICBMs and SLBMs. Deployed in high earth orbit for optimum viewing and survivability, BSTS would use advanced sensors and processing techniques to track missiles by observing the missiles' hot exhaust plumes. Technology programs, ground demonstrations, and optical measurement programs are in process and focus on developing a complete understanding of the phenomenology and system design requirements. Ground demonstrations are scheduled to support both a system design selection and a full scale development decision in early 1991. The first BSTS deployment is planned for the mid-1990s, and is needed to maintain our ballistic missile early warning mission (BMEWs) independent of strategic defense.

MIDCOURSE/TERMINAL PHASE SENSORS

Detection, tracking, discrimination, designation and handover of targets in midcourse would be accomplished by a suite of cooperative sensors. Sensor concepts for the midcourse region consist of the Ground-based Surveillance and Tracking System (GSTS) and Space-based Surveillance and Tracking System (SSTS). The Ground-based Radar (GBR) would provide a late midcourse and high endoatmospheric active sensor system to track and discriminate surviving reentry objects.

The midcourse sensors would work together with handoff from BSTS to track offensive ballistic missiles, post-boost vehicles, reentry vehicles and other objects. Target data, weapon assignment, and fire control in-flight update information from the midcourse sensors would be transmitted to the defensive interceptors.

GROUND-BASED SURVEILLANCE AND TRACKING SYSTEM (GSTS):

GSTS would be a fast-response rocket-launched long-wavelength infrared (LWIR) sensor system boosted into suborbital flight for use in the midcourse layer. GSTS would enhance strategic defense robustness by providing a reconstitution capability. GSTS would be operationally integrated with SSTS and GBR to provide track and discrimination data. With handoffs from SSTS, GSTS would search selected corridors, flying close to threat trajectories in order to resolve closely spaced objects. GSTS would be used to cue GBR for objects/clusters requiring further discrimination.

The GSTS project is developing concepts and multiple sensor designs under a single prime contractor and two sensor subcontractors. A GSTS sensor design will be selected based on critical sensor component technology experiments and sensor test bed results.

SPACE SURVEILLANCE AND TRACKING SYSTEM (SSTS):

The SSTS would be a constellation of satellites and ground stations that perform midcourse tracking necessary to commit defensive interceptor systems. The primary sensing payloads of the SSTS satellite would be a LWIR passive sensor (common with GSTS) and a visible ultraviolet passive sensor. The primary mission of SSTS would be to track Post-Boost Vehicles (PBVs), target clusters, and anti-satellite weapons.

In peacetime, SSTS would be able to perform valuable foreign target signature collection and satellite tracking functions. The early satellites would gather phenomenology data required for design optimization of surveillance and seeker systems.

Development of the concepts and design for SSTS is under way with two prime contractors. The contractors will provide end-to-end ground demonstrations of their concept designs. Under the current plan, one concept will be selected and a prototype SSTS satellite system will be fabricated.

GROUND-BASED RADAR (GBR):

The GBR became a candidate for inclusion in the midcourse sensor suite, along with the SSTS and the GSTS, based on recommendations of the Midcourse Sensor Study. The GBR would provide track, search, acquisition, discrimination, and kill assessment functions. In addition, the GBR would accept target handover from other sensors and provide track and homing data for ground- and space-based interceptors. The GBR would be a single-faced, x-band phased array radar. It would provide enhanced discrimination by measuring the microdynamics of space-borne objects. Two basing concepts are under consideration: fixed and mobile.

Concept definition will continue during fiscal year 1990. The project will perform threat/radar response evaluation and analyses leading to multiple GBR system design concepts. Each concept will be evaluated in sufficient detail to establish system effectiveness, technical and programmatic risks, cost estimates, and interface requirements. Two GBR concepts will be selected for a competitive 12-month preliminary design phase.

DEFENSIVE INTERCEPTORS

GROUND-BASED INTERCEPTOR (GBI): *

GBI would be a ground-launched exoatmospheric interceptor which could conduct hit-to-kill intercepts of ICBM and SLBM RVs in the late midcourse phase of their trajectory. The midcourse sensors would acquire, track, and pass target information to the ground-based command center element. The ground battle management segments would discriminate, assign interceptors to targets, provide trajectory and launch data to the interceptor, and communicate target vector updates to the interceptor in flight. The interceptor would have some on-board discrimination capability to relieve data rates and processing requirements on board the midcourse sensor.

The GBI development program has two parts: (1) demonstration and validation of the concept and technologies, and (2) development of advanced exoatmospheric interceptor technology.

SPACE-BASED INTERCEPTOR (SBI):

The SBI would be a chemical-powered, kinetic energy system designed to engage enemy targets in the boost, post boost, and early midcourse portions of their trajectories. The current design would utilize a carrier vehicle constellation with each carrier vehicle carrying ten interceptors. SBI would be linked to BSTS and SSTS.

SBI will engage the threat in the boost, post boost, and midcourse phases. However, SBI would obtain the maximum defense

* The Exoatmospheric Reentry Vehicle Interceptor Subsystem (ERIS) is the Dem/Val portion of the GBI project.

leverage by intercepting boosters and PBVs before they have a chance to deploy RVs and decoys.

Changes in the SBI concept from 1988 to 1989 reflect the results of successful research to improve performance. Because of major advances in the projectile portion of the SBI, the weight was reduced, allowing each interceptor to operate at increased velocity and range, thus reducing the satellite constellation. In addition to design changes, employment tactics have improved which will result in the destruction of additional RVs for equal number of SBIs. This improved effectiveness has been utilized to maintain the SBI role in meeting operational requirements while reducing constellation size.

Although the present architecture calls for SBIs to be garaged in groups of ten interceptors, the interceptors could be deployed, with modification to battle management and surveillance requirements, as free flying "singlets." The concept of a singlet, in which the total surveillance is built into the interceptor, is embodied in a concept called Brilliant Pebbles. This interceptor would be autonomous. Given a positive release command, the interceptor would use its own sensors to acquire a target and engage it without external tracking data or other assistance.

The interceptor should be low cost because it is derived from pervasive use of miniaturized commercial and military "off-the-shelf" high technologies, including miniaturized high-resolution/wide-field-of-view video imaging systems that work from the mid-UV to the mid-IR range, a super computer with Cray-I performance operating off high-energy-density "D-cell" sized batteries, a miniaturized high-power laser imaging radar/communications system, and a high-mass monopropellant propulsion system.

This fall, subsequent to Brilliant Pebbles study efforts described above, we will reexamine our space-based architecture with a view towards the degree of incorporation of this singlet concept.

BATTLE MANAGEMENT/COMMAND, CONTROL, COMMUNICATIONS:

This component has been redesignated the Command Center/System Operation and Integration Functions (CC/SOIF). The Command Center element would provide positive, survivable, and secure human control over the SDS. It would consist of fixed and mobile units and a terrestrial communications network with ground entry points for interconnectivity to the space components. CC would also support coordinated offense-defense operations and interfaces with other U.S. government agencies.

The System Operation and Integration Functions include the distributed information processing network needed for the automated execution of a human-selected battle plan. This would require both the assured, secure exchange of information between the CC and all SDS elements, and the data processing to identify targets, allocate weapons, execute the defense and assess its success, and manage the system's resources.

A baseline CC/SOIF architecture has been identified, with automated decision functions allocated to interceptor and sensor elements.

FOLLOW-ON TECHNOLOGIES

Advanced defenses, necessary to maintain and improve the initial defensive system capability, may include some or all of the following major candidate systems, depending on the threat response and the technological progress. Or, if more promising, one of these could be moved to the initial phase. In the phased approach to development these concepts could be introduced into later SDS deployment phases as they reach technical maturity and as mission requirements change.

HIGH ENDOATMOSPHERIC DEFENSE INTERCEPTOR (HEDI):

HEDI is a ground-based, hypervelocity, high acceleration interceptor that could engage ballistic missile RVs in the upper atmosphere. HEDI is the most mature interceptor of the follow-on SDS architecture. Its contribution would be an additional defensive layer to further reduce RV leakage rates. HEDI would be integrated with midcourse sensors using the CC/SOIF. The midcourse sensors and associated CC/SOIF would be used to provide RV detection and discrimination, determine the RV intercept point, select the appropriate trajectory for engaging each RV, and issue a launch command to the interceptor.

HEDI research is focused to resolve specific technology issues dealing with aero-optical effects, window and forebody cooling, shroud removal, non-nuclear warhead kill and guidance and control. HEDI could enter the DEM/VAL stage in fiscal year 1990.

DIRECTED ENERGY WEAPONS:

Directed energy devices are exceptional candidates for ballistic missile defense missions. They possess unique characteristics such as near speed-of-light delivery and long-range and multiple-shot capability that could significantly enhance the effectiveness and responsiveness of an evolving, sequentially deployed SDS. Directed energy systems, such as those described on the following pages, would be capable of evolutionary growth from an early boost-phase intercept capability to the performance levels required to negate robust, long-term responsive threats.

NEUTRAL PARTICLE BEAM (NPB):

The NPB would produce a stream of atomic particles to penetrate into a target and provide lethal energies to disable or destroy RVs. The NPB could be utilized in the boost, post-boost and midcourse regions. The NPB would be capable of effecting electronics kill on launch systems in the boost and post-boost portions of the trajectory. The more robust NPB would increase target handling and would have the ability to attack and disable or destroy RVs in the midcourse region. When used for the boost/post-boost defense mission, the NPB would consist of a number of platforms in space. When used for the midcourse discrimination mission, neutron sensor satellites would be colocated with NPB platforms in space.

CHEMICAL LASER/SPACE-BASED LASER (SBL):

As presently conceived, the hydrogen fluoride chemical laser is the most likely candidate for a SBL. A constellation of SBLs would consist of orbiting, highly autonomous battle stations capable of directing extremely powerful and agile infrared laser beams on targets. These battle stations could destroy missiles in boost phase down to the cloud tops. They could also provide interactive discrimination by destroying simple decoys (e.g. balloons) and thermally tagging or imparting a velocity change to more sophisticated decoys. Demonstration and validation of SBL technology will occur in the Zenith Star program.

GROUND-BASED FREE ELECTRON LASER (GBFEL):

The GBFEL would generate an intense laser beam capable of boost-phase intercept and interactive midcourse discrimination. The high-energy laser beam would be transmitted via the beam control subsystem, which would correct the beam for proper transmission through the atmosphere to relay mirror spacecraft. The beam is then redirected and focused on the target. The GBFEL program is structured to pursue Dem/Val in the early 1990s.

BALANCED SDI PROGRAM

Sustained and focused technology advances are requisite to developing and maintaining a viable SDS. Accordingly, SDIO program strategy balances both basic research and focused technology development with system development. Advances that have resulted from these balanced technology efforts are necessary for a thoroughly reliable defense. They also serve to maintain the viability of Phase I deployments against responsive threats. Examples of progress in this area include the many sensors, processors and control elements associated with the acquisition, tracking, pointing, and fire control necessary to orchestrate an SDS. Chapter 6 of the Report to Congress on the SDI Program contains a comprehensive description of the SDIO technology base research accomplishments, and future plans.

SDI research accomplishments have increased our confidence that strategic defenses will prove feasible. In past years, SDIO has conducted a series of kinetic energy and directed energy weapon technology tests. Kinetic energy tests have successfully demonstrated the capability to intercept and destroy -- by non-nuclear means -- enemy ballistic missiles before they reach their targets. The first of a series of "hover tests" of a space-based interceptor have been conducted in a ground test facility. These tests help evaluate the capability of fast acting thrusters to keep a sensor pointed at a target, and the interaction of the sensor and guidance systems. The most recent successful hover test was conducted on April 25, 1989, when a SDI projectile facsimile hovered and maneuvered for 21 seconds.

The Aerothermal Reentry Experiment (ARE) demonstrated that kinetic energy weapons can destroy warheads not only with a perfect hit, but also by inflicting damage with a less-than-perfect collision. ARE demonstrated the process of self-destruction of a damaged warhead as it enters the atmosphere.

With directed energy experiments, researchers have demonstrated several key principles related to the operation of a large Free Electron Laser, a weapon which could become powerful enough to destroy enemy ballistic missiles in the boost and post-boost phases of flight. The Free Electron Laser has demonstrated lasing which shows wavelength scaling beyond that needed for an operational defense system. Also, for the first time, a major milestone was achieved when the Alpha Chemical laser recently produced a high-power beam in a simulated space environment.

The March launch of "Delta Star" continued the success of earlier experiments which demonstrated substantial improvements in our ability to develop sensors necessary for strategic defenses. Last Year's DELTA 181 experiment provided valuable information on the signatures of midcourse targets. The assortment of active and passive sensing instruments accurately characterized the test objects in a variety of space environments and also observed the launch of a research rocket. This data is being used to develop effective algorithms for discrimination between decoys and reentry vehicles.

Our program schedule for the next two years includes a number of very important tests and experiments. All are fully compliant with U.S. treaty obligations. A few upcoming projects and experiments and their contribution to the research program are highlighted below.

EXPERIMENT	OBJECTIVE
Beam Experiment Aboard Rocket (BEAR)	First test of a Neutral Particle Beam in space.
Laser Atmospheric Compensation (LACE), Relay Mirror Experiment (RME)	Space test of relay mirror and atmospheric compensation process for ground-based free electron laser.
STARLAB	Space test of tracking/ pointing, sensor and communications technologies.
Space Power Experiment Aboard Rocket (SPEAR) II	Space test of high power electricity applications.
Airborne Optical Adjunct Infrared Experiment	Airborne test of LWIR sensor.

The Report to Congress on the SDI program contains additional information regarding upcoming SDI experiments, including their compliance with the ABM Treaty. As has been the case since the program's inception, planned tests and experiments for fiscal years 1990/91 are in full compliance with the ABM Treaty. All planned activities are reviewed in detail by the Department of Defense Compliance Review Group to ensure such compliance. This review process is a deliberate, vigorous study of plans and treaty considerations.

I would like to touch briefly on one other item before closing. As you are aware, the SDI research involves our Allies. President Reagan's original guidance and SDIO's charter reflected a concern for both U.S. and Allied security and stressed the development of defensive technologies for ballistic missile threats of all ranges. Several Allied nations are actively participating with valuable technical contribution to the program. The anti-tactical ballistic missile program, conducted with Allies, will include analyses, technology developments, and experiments that will improve our understanding of the theater defense problem.

Allied participation in SDI research - increasingly rich in technical merit through rigorous competition - is of great benefit to the United States as well as the participating nations. Allied participation contributes to the timely attainment of SDI objectives with work of the highest quality performed at the lowest possible costs. We will continue to cooperate with our Allies on many aspects of the SDI research program.

CONCLUSION

Tangible, impressive results from our research efforts have given us increased confidence that strategic defenses are feasible. Our progress has been excellent, but we still have much left to do. The amended budget request for fiscal years 1990/91 will enable us to maintain the necessary balance between research on Phase I and follow-on technologies in order to provide the technical foundation for a viable SDS option. A reduced appropriation would degrade our ability to maintain that essential balance of research, and remain on track to provide strategic defense strategy options in the 1990's.

Robust, undistributed funding is required to maintain both program flexibility and responsiveness. A research program as innovative and dynamic as ours cannot afford, in a technical sense, to be constrained by fences or inflexibility. Much in the same manner a battlefield commander needs the freedom to use his resources and to seize opportunities, the SDIO manager needs the flexibility to fund high payoff technologies - ones that will keep our program on track to fulfill our objectives.

I will be happy to answer any questions you may have.

IMPEACHMENT PROCEEDINGS

Senator INOUYE. General, we have a slight problem at this time. It has been announced that at 10:45, which is 5 minutes from now, there will be a live quorum, after which all of us will be required to take a special oath in preparation for the impeachment proceedings of Judge Nixon.

Procedurally, we are all required to take this oath. This being the case, I would like to suggest that we proceed as far as we can, and, when the time comes, we will recess and come back again.

General MONAHAN. OK.

DRAMATIC REDUCTIONS

Senator INOUYE. My opening question is just a matter of curiosity.

We have received to date many statements, but all rather general in nature, and we have been told that components are changing and schedules are slipping, assessments have changed. How did you decide where to make your reductions? Some of the reductions are rather dramatic in nature, especially in the first phase, for example?

REVISED BUDGET

General MONAHAN. Well, it was not an easy task to accomplish. By the way, the budget, as we have revised it internally, within the $4.6 billion, of course is still subject to change as we work more with the services and our other agents during the summer.

But let me just emphasize a couple of main points.

First of all, we tried to keep in mind that what we want to do within the period of the next 3 to 4 years is answer the very toughest technical questions that are before us. So we have looked at what those are, and we concentrated on those—production of focal plane arrays, for example; production of radiation hardened components for signal processors; optical areas.

Then, the second thing we want to do is to see what we can do in the way of cost reduction. I personally think that the estimate for the first phase of the program, which is $69.1 billion, I think we can do a lot better than that. So there is emphasis in two areas: In cost reduction and in technology.

That, then, caused some changes in the program, first of all, in the first phase, phase I. I mentioned all those systems—GSTS, BSTS, et cetera. Other than BSTS, all of the rest of them had to slip out. They are all in the demonstration/validation phase at the present time, and they are all necessary elements, except, as I mentioned earlier, we are going to look hard at the space-based elements, the SSTS, the SBI, in conjunction with Brilliant Pebbles.

Now, that part of it is unsettled. But the ground-based part of the system we have decided is sound, and it is in the demonstration/validation phase. In other words, it's in a technology phase of its own at the present time, as specifications and requirements are solidified. That slips out a couple of years.

In addition to that, we kept up the technology work per our guidance for future phases of the program, for the directed energy weapons. The space-based laser, ground-based laser, and neutral particle beam—all of those had to suffer some hits, obviously, in order to stay within the fiscal guidance. One of the key experiments is the Zenith Star experiment on the space-based laser, which is very important to your pointing and tracking in space. They had to slip out a period of about 2 years.

That is just one of the examples.

PHASE I REDUCTIONS

Senator INOUYE. GAO and the Office of the Secretary of Defense, in reviewing the assumptions upon which the reductions were based on phase I, contended that the assumptions were very optimistic.

You don't believe they were optimistic?

General MONAHAN. I'm not sure I know exactly what assumptions these were, Mr. Chairman?

Senator INOUYE. The assumptions on new technology and cost reductions.

General MONAHAN. Oh, yes. Excuse me. I understand.

First of all, it's a very good question, and in order to get a handle on that ourselves, over the period of the past year, we have had the American Institute of Aeronautics and Astronautics take a good, hard look at the program from the point of view of technology.

They completed their work in March. They gave a very strong thumbs-up. They said there is technology that has to be worked. There is a lot of it. There is no question about that.

But the program that has been designed will address that technology and, once done, you can expect that you would have a robust program and a successful program.

Obviously, it is not without risk. But I thought that that report—and I would be happy for anybody to see it if they would like to—is a very well done report. It took over a year's period to do it. I thought it was very supportive of previous assessments that had been done by other groups.

Obviously, within the Department of Defense, we have looked very hard also at is it possible to do it technically. We say that it is kind of a sporty course, but, indeed, it is possible to do.

CANCELLATION OF SDI REVIEW BOARD

Senator **Inouye**. The Defense Acquisition Board was scheduled to meet Monday and review SDI. Somehow they cancelled that.

Can you tell us why they cancelled that and when will this be rescheduled?

General **Monahan**. Well, I believe you have heard Mr. Cheney say in the past that it is difficult to try to do a budget revision at the same time that you are trying to do a national strategic review.

Ideally, you would like to have the strategic review come first and the budget review is going to come later.

Well, the strategic review is not completed yet, and until we get that done, it probably does not make a lot of sense to look at the really fine-grained details of just how we, in the SDI organization, have revised our budget for the next year.

They wanted to get that part of it behind them first, I think, and make sure that the guidance from the national leadership was in place before they had the DAB.

Senator **Inouye**. I have many other questions, but I would like now to call upon my colleague, Senator Harkin.

DEPLOYMENT OF A SYSTEM

Senator **Harkin**. Mr. Chairman, thank you.

General, again, as I said in my opening statement, I was somewhat taken by the first sentence on your first page, which says that SDI will continue toward deployment of a system.

Does this statement indicate more of a commitment to deployment or less of a commitment to providing the technical information to decision-makers? Is that a commitment to early deployment?

General **Monahan**. As I mentioned earlier, Senator, during my presentation, the plan here is to get ourselves in a position such that in about 3 to 4 years, deployment decisions could be made, but not before then.

In the meantime, in our planning, obviously we need to look at what is going to be the military utility of the technology we are doing. We have to have some sort of systems that we are notionally going after.

That part was resolved here over the past couple of years and finalized with the defense acquisition board last fall. That is why we initiated the demonstration/validation phase of the various systems that I just described.

So, what I'm saying is those are the systems that eventually, should a decision be made to deploy, those are the types of systems we would deploy.

BRILLIANT PEBBLES

Senator **Harkin**. Following up on what I said earlier about what seems to be the shifting focus of this program, let me talk a little bit about Brilliant Pebbles.

First of all, we had the space-based intercepters, the smart rocks, the ten that were housed in the garages. Now I hear you say that we can put each one of these up there, and that they would be faster and lighter. You said they have been miniaturized.

But in the garage system, you had 10 SBI's that had one basic energy source, one battery, one radio, one guidance system for all 10.

Now, each one of those will have to have its own communication receiver, power source, navigation reference system—on each one. So, it would seem to me if you took each one of those separately and added them up, the 10 of them together would weigh a lot more than the 10 of them housed in one garage.

So how can they be lighter?

General **Monahan**. Well, first of all, those are the sorts of questions that we need to look at as we do our evaluation of the Brilliant Pebbles concept this summer, to find out is it possible to do the kind of miniaturization required and get the kind of performance. That is done through miniaturization.

MINIATURIZATION TECHNOLOGY

Senator **Harkin**. But if miniaturization can be done on each one, why don't you apply the same miniaturization technology to the SBI's housed in the garage?

General **Monahan**. Well, you know, you probably could. You are bringing up a very, very good point.

One of the possible outcomes of the evaluation that we do this summer, and the space-based architecture that we would derive from that could be a merging of the current conventional concept and the Brilliant Pebbles concept.

I think at the very least, out of the Brilliant Pebbles, even if we don't give it a strong thumbs up, to proceed just as it is envisioned today, at the same time I think we are going to get a lot out of it, technically speaking, that we can put into the conventional system.

The other point is should we continue to put 10 interceptors in one carrier vehicle, that causes certain problems. By spreading them out, you can enhance survivability, among other things. By putting 10 of them there, you get kind of a fat target.

So that is another thing that we have to look at. Maybe the right number to group together is two or three, instead of 10. Or maybe it is one.

That is what we need to look at in the space-based architecture studies that we will do this fall.

ASAT SYSTEM

Senator **Harkin**. So, inherent in your answer there is the assumption that the Soviets will develop an effective ASAT system to go after those garages.

General **Monahan**. I didn't say they would develop it, but we have to look at the survivability aspects of the system constantly.

SURVIVABILITY OF GARAGE

Senator **Harkin**. But, again, the survivability aspect of the garages would be based upon whether or not the Soviets had the ability to shoot them down.

General **Monahan**. Yes, indeed. But with the pebbles deployed one at a time, they would be spaced, as I mentioned earlier, about every 250 to 300 kilometers apart. That is about as close as you would find them. One nuclear ASAT could only take out one pebble. So I think you inherently have a pretty poor trade, there. So you inherently have a lot of survivability, I think, just through proliferation, with the singlet concept.

SINGLETS

Senator **Harkin**. But, again, you'd then have to have a lot of those singlets to make any kind of coverage to effectively blanket a massive launch of missiles from the Soviet Union.

General **Monahan**. Yes.

Senator **Harkin**. So you are still looking at taking out maybe, what, 20 percent? You're still looking at basically getting a few missiles in the early boost and post-boost phase with these singlets, are you not?

General **Monahan**. Well, the number that we would get in the boost or post-boost phase, of course, would depend upon the number of interceptors deployed, probably, more than anything else.

Senator **Harkin**. Any idea of how many it would take for, say, 100 percent, 80 percent, or 50 percent?

General **Monahan**. I have some ideas, but I don't think they are really sound.

I will just say this.

I think it is in the few thousand area. I think it is in the vicinity of 4,000, 5,000, or 6,000, maybe more. It depends pretty much on robust you may want to get.

But that is one of the very key questions we have to look at. How many of them would we have to have to have a robust system.

KINETIC KILL VEHICLES

Senator **Harkin**. I understand that SDI conducted five major system architecture studies just 2 years ago, that investigated various basing schemes for these kinetic kill vehicles.

I understand that all five system architects considered the singlets, but every one of them rejected this in favor of the common carrier system. Is that correct?

General **Monahan**. I wasn't on the program 2 years ago, so I don't recall the details of that, Senator. I would be happy to look it up.

Senator **Harkin**. I would appreciate that because I understand that they did reject that just 2 years ago.

[The information follows:]

SDI SYSTEM ARCHITECTURE STUDIES

The five System Architecture and Key Tradeoff (SAKT) study contractors did consider the use of singlet interceptors, and they did favor the use of carrier vehicles. However, they did not necessarily "reject" singlets. At least one architect discontinued the analysis of singlets because the Space Based Interceptor (SBI) program was more mature and they did not have sufficient funding to pursue both. In addition, a number of factors have changed over the last several years which justify a reexamination of singlet concepts.

Singlets were considered, for the most part, during the first phase of the SAKT studies in the 1985–86 timeframe. At that time, the SDI Program did not have either a threat or mission approved by the appropriate DoD agencies. The early SAKT work concentrated on designing systems for early deployment which would eliminate virtually the entire Soviet threat. This had two important impacts on the system. First, the SBI was designed to operate autonomously because the Space Surveillance and Tracking System (SSTS) was not considered to be available for early deployment. This required significant sensor capabilities on the carrier vehicle. Second, very large numbers of Space Based Interceptors (SBI) were required to achieve the mission, and it was found to be more effective operationally to group them on carrier vehicles.

Just as the mission changed, so to has the threat. In particular, the ASAT missiles defined in the early studies had considerably less capability then those currently in the DIA validated threat for the Strategic Defense System (SDS). Thus, the carrier vehicles in the SAKT studies were capable of self-defense by shooting back at the ASATs. As our studies focussed on the approved JCS Phase I SDS mission, later deployments, and the validated Soviet ASAT capabilities, we modified the SBI concept. The architecture presented to the DAB last fall utilized dispersal under ASAT attack rather than shoot-back, and the carrier vehicles did not contain sensors because SSTS can be deployed before SBI. The use of singlet interceptors may be viewed as the next step in the evolution of the architecture definition.

The evolution of the system design to more independent interceptors has been made possible by improvements in technology, particularly in the areas of sensors, data processing, and communications. These technology advances allow us to place systems on the interceptor which previously had to be on a carrier vehicle because they were too big and expensive. Coupled with this is the innovative thinking of the personnel at Lawrence Livermore National Laboratory. They have defined multiple uses for equipment onboard the interceptor, resulting in further reductions in weight and cost.

In conclusion, it must be noted that the Brilliant Pebbles program is still in the concept definition stage. During this coming summer the Defense Science Board and the JASON will review the Brilliant Pebbles concept and the SDIO and the Services will be conducting studies of several concepts for the space-based portion of the SDS architecture. These studies, combined with cost assessments of Brilliant Pebbles by the Air Force and SDIO, will provide a basis for any necessary adjustments to the Phase I SDS architecture.

PEBBLES TESTING

Senator HARKIN. Let me just ask one final question.

Do you believe that the Brilliant Pebbles could be tested in space without violating the ABM Treaty?

General MONAHAN. As I stated earlier, the way we would intend to do it in a treaty-compliance mode is to test interceptors themselves in a suborbital sense, first of all, and then test the communication system in an orbital sense, all of that being treaty compliant. Finally, when you——

GENERAL TESTING

Senator HARKIN. Would testing in the suborbital sense be violating the ABM Treaty?

General MONAHAN. No.

Besides being suborbital, there are some other provisions about whether or not the interceptors would be thrusted, et cetera, and the sorts of targets they would attack that would make it treaty-compliance.

Ultimately, you would have to test them in a mode that would not be in compliance with the treaty. You'd finally have to do a graduation exercise, a full-up test of some sort. So from that point of view, ultimately you would run into the treaty.

Senator HARKIN. Thank you, General.

Senator INOUYE. Senator Bumpers.

Senator BUMPERS. General, first of all, I want to compliment you on your presentation. I don't intend to denigrate your predecessor, but most of us are laymen. We have to make two decisions here. First is whether or not we think this is technologically feasible, and, second, if it is, then whether it is good policy for us to go forward with it.

Some people, I, will always oppose SDI on a policy basis. But you certainly have given us a clearer picture of your research and what you are doing than anybody else, and, for a layman, that is extremely important. Your testimony I think is very credible.

Just the fact that you state the multitudinous problems that you have to overcome in developing this system is refreshing.

On page 9 of your testimony you say, on battle management/command, control, and communications: "This component has been redesignated the Command Center/System Operation and Integration Functions. The Command Center element would provide positive, survivable, and secure human control over the SDS."

How much time would the person or persons have from the time a missile is launched to make the decision?

General MONAHAN. If you want to attack them with the space-based interceptors, Brilliant Pebbles, and get them in the boost or post-boost phase, it is down in the minutes category, and I mean just 2 minutes or 3 minutes, somewhere in that vicinity.

BOOST PHASE DECISION

Senator BUMPERS. If you were going to get them in the boost phase, how much time would you have to make the decision? Let's assume that we're talking about subsequent technology. As I read your charts, we were looking at three different systems over a period of years.

General MONAHAN. I'm not sure what part of my knowledge is classified or unclassified. But I can tell you that it is very——

Senator BUMPERS. Let me reassure you.

I have a letter from General Abrahamson inquiring about this very point, in which he said the decision would be made in between 50 and 90 seconds.

Is that too short?

General MONAHAN. That strikes me as perhaps being a little bit short, but not much. I'd have to say within the 90 second or 120 second timeframe is probably about right.

Senator BUMPERS. But you do anticipate definitely a man in the loop?

General MONAHAN. Definitely. You have to have a man in the loop by that time. No question. And that is do-able.

EFFECTIVENESS OF THREE SYSTEMS

Senator Bumpers. Would any of these three systems that you can describe or that you can envision, no matter how far into the distance, would any of these systems be effective against GLCM's, for example, or the LANCE, or even a modernized LANCE?

General Monahan. The systems that I described here would not be effective against cruise missiles, because those operate in the atmosphere. There is nothing that I described here in phase I that is effective in the atmosphere.

Senator Bumpers. It would not be effective against any system that did not go into space?

General Monahan. That did not go outside the atmosphere. That is true.

SDI DEFENSE

Senator Bumpers. Let me ask you a policy question.

If the United States and the Soviet Union both had the ultimate SDI deployed, in your opinion, would we be helped or hurt in our defense?

General Monahan. Well, I'm not sure I can describe exactly what——

SDI SYSTEMS

Senator Bumpers. This is an assumption. Let's just assume that we build and deploy the ultimate SDI, and if history is any guide to us, the Soviets do the same. They may get it done 5 or 10 years later, but they probably would almost certainly do it, as they have in the past.

If both of us had a system that was identical, would we be helped or hurt?

General Monahan. Well, Mr. Chairman, I like to leave those kinds of considerations to the people that develop strategy and develop policy.

THRESHOLD FOR NUCLEAR WAR

Senator Bumpers. Perhaps that is an unfair question of you, General. You are the technician here.

The other question that I asked yesterday of a gentlemen from the State Department—and I never can find anybody who can answer the question—is if both systems have the ability to destroy each other, is the threshold for nuclear war raised or lowered?

General Monahan. Again, I think that is a very involved question, Senator.

Senator Bumpers. Would it be fair to say whoever pushed the button first would have an advantage? Wouldn't it?

General Monahan. Pardon?

ADVANTAGES

Senator Bumpers. It would be fair to say that whoever pushed the button first would have an advantage?

General **Monahan**. Well, it depends upon what happened when they pushed that button first, you know, what got launched, how many, where to, what would be the possible reactions against them. I think that is a very involved question that would have to be answered.

Senator **Bumpers**. Of course, General, those are the questions that we have to answer before we appropriate money to deploy the system.

General **Monahan**. I understand.

Senator **Bumpers**. One other question that nags me—and, of course, this is down the line, but I'd like to get it on the record now from you, in case you are still in your present position—is this. Some of us here have an apprehension that sometimes these things sort of get out of control before we uncover them.

Do I have your personal assurance that you would never attempt to deploy this system in any mode without presenting it to Congress first?

General **Monahan**. First of all, I do not have the authority to make that decision, Senator.

Senator **Bumpers**. The President could make the decision.

General **Monahan**. The President has that decision-making authority.

BRILLIANT PEBBLES DEPLOYMENT

Senator **Bumpers**. I just want to make sure that we don't wake up some day and find some of these Brilliant Pebbles deployed with money that we have appropriated for research but not for deployment.

General **Monahan**. Again, first of all, the funds, in order to do so, have to be appropriated by the Congress.

There are no production funds even on the books anywhere for this system, other than for the boost surveillance and tracking system, for the next 5 years. That's first of all.

Second, I think the one assurance that you have is that the existing ABM Treaty does not permit deployment of space-based weapons or ground-based weapons, other than 100 interceptors.

ABM TREATY

Senator **Bumpers**. Again, this might not be a fair question, but I think you know enough about the ABM Treaty to agree with me that we couldn't deploy any system and be in compliance with the narrow interpretation of the ABM Treaty, could we?

General **Monahan**. The narrow interpretation of the treaty or the broad interpretation of the treaty does not have anything to do with deployment of the system. We may not deploy the system in either a broad or a narrow interpretation.

There is nothing ambivalent or nothing that really needs to be interpreted about the treaty when it comes to deployment.

The only time you need to worry about some sort of interpretation is when you want to argue about what kind of tests may you do on certain parts of the system. That is what that broad and narrow is all about. The broad and narrow interpretation has nothing to do with deployment, because deployment is not permitted.

THREE SENSORS

Senator **Bumpers**. General, you have three sensors from mid-course on, and I take it that those sensor systems are designed to determine whether or not you are aiming at a decoy or the real thing. Is that right?

General **Monahan**. That's partially right. I mean, they have other tasks as well.

REAL MC COY

Senator **Bumpers**. Is one of the problems the fact that a decoy would have a tendency to wobble a little bit in space and the real McCoy would not, and that your sensors have to detect that thousands of miles away, whether or not that is happening? Is that correct?

General **Monahan**. Well, the decoys and the reentry vehicles, again, without getting classified, have many differences in signature. Wobbling is just one of them.

BOOST PHASE MISSILES

Senator **Bumpers**. Mr. Chairman, I guess we need to go and vote. Let me ask just one final question. I have others, but I will suspend those and maybe submit them in writing to the general.

There are two questions.

First, if the Soviets develop a missile with a boost phase that is half as long as it is now, would that complicate your problem?

General **Monahan**. It changes the problem. Whether or not complicates is exactly the right word is hard to say. But it would change the problem because now, the amount of time that he has to go in boost and post-boost, it's in those two phases that he is very, very vulnerable. The amount of time that he is in both phases will probably remain about the same. It could be reduced a little bit. But he will still have a very vulnerable post-boost phase as well as a boost phase.

WARHEADS INTERCEPTION

Senator **Bumpers**. The last question is this. Do we assume that when we intercept these warheads, they do not explode?

General **Monahan**. No; I don't think we assume that at all.

Senator **Bumpers**. Would you assume to the contrary, that they would explode?

General **Monahan**. No; I would not assume that either. I think you'd have to say that you don't know.

Senator **Bumpers**. Have you all done any studies, has SDIO done any studies on what the environmental impact would be if, say, out of 10,000 warheads, 1,000 of them exploded?

General **Monahan**. In space?

Senator **Bumpers**. Let's assume that you intercept all 10,000 of them and 1,000 explode in space.

General **Monahan**. No; because I think we would more or less assume that it is much better for them to explode there than down here.

Senator **Bumpers**. Well, I understand that. But I am just curious——

General **Monahan**. I don't believe we have done that kind of study.

Senator **Bumpers** [continuing]. About what the world environmental problems would be in case that happens.

General **Monahan**. I don't think we're worried about the environmental aspects of it at that stage of the game.

Senator **Bumpers**. Thank you, General.

Senator **Inouye**. We will stand in recess and will be back, hopefully, in about 15 minutes.

Senator **D'Amato**. Mr. Chairman.

Senator **Inouye**. Yes?

PREPARED STATEMENT

Senator **D'Amato**. If I might, before we recess, may I be permitted to submit a statement for the record?

Senator **Inouye**. Yes.

Without objection, it is so ordered.

Senator **D'Amato**. Thank you.

[The statement follows:]

STATEMENT OF SENATOR ALFONSE D'AMATO

Thank you, Mr. Chairman. I want to welcome General Monahan, and congratulate him on his appointment. I look forward to working with you in the years ahead.

In May 1988, the Defense Science Board Task Force Sub group on Strategic Air Defense, or SDI milestone panel, released a report that outlined a six-step strategy for achieving a realistic, effective, affordable, ballistic missile defense capability.

Specifically, the report called for: (1) The deployment of 100 fixed ground-based long-range interceptors cued from existing warning sensors; (2) the deployment of the next generation of space surveillance systems to improve our early warning detection and assessment of a ballistic missile attack; (3) the deployment of shorter-range interceptors to protect the national command authority against decapitation by ballistic missiles, including those from submarines; (4) further expansion, including additional bases and ground-based interceptors and improved sensors to cope with countermeasures; (5) the addition of space-based interceptors for boost and post-boost attack; and (6) the addition of space-based or ground-based directed energy weapons.

As far as I know, the report was promptly buried. My question is, why? The program outlined by the DSB, one of incremental steps with each one building upon the last, struck we as eminently rational, salable, and achievable. I hope, General Monahan, that you will be able to shed some light on the fate of this report and its recommendations.

Thank you, Mr. Chairman.

BRIEF RECESS

Senator **Inouye**. We will be in recess for a short period of time.

[A brief recess was taken.]

Senator **Inouye**. I'm sorry for the delay. The procedure took much longer than we had anticipated.

At this time, may I call upon Senator Johnston.

Senator **Johnston**. Thank you, Mr. Chairman.

CONCERNS

General Monahan, I want to echo what other members of the committee have said in complimenting you on your attitude, your openness, your candor, and, in my own case, your in-depth discussion with me in the office in which we discussed this whole program.

You will recall that, at that time, I told you that I had been sometimes a supporter, sometimes a critic, sometimes an adversary of the program, but that my concern, along with the concern of many Members of Congress, is that perhaps we feared that SDIO or DOD or whoever might do some things with research funds which might break the treaty, or which might commit us to a program of development or deployment inadvertently, without having put the decision or mode up on the table between the White House and the Congress.

You will recall that. I think your response at that time was that you agreed that we should not do those things without having an agreement to do it.

General MONAHAN. Yes, sir.

Senator JOHNSTON. Now, my concern is that in your reports to the Congress in 1985 and in every year since, you indicated that—that is, every year since except for this year—there was an indication that there would be no components designed, built, or demonstrated until the President and the Congress, after consultation with the allies, made that agreement.

I have constructed some proposed language which I am asking my staff to hand to you. Let me just read it, and I will hand out copies to my colleagues. No funds in this act may be expended for the systems development or full-scale development phase of SDI, during which prototypes of actual defensive system components would be designed, built, or demonstrated, until the President and the Congress, after consultation with the allies, make a formal decision on whether or not to proceed to the system development phase and subsequent deployment of SDI.

You will note the language of art in there, systems development, or full scale development phase of SDI.

General MONAHAN. Yes.

PROTOTYPES

Senator JOHNSTON. We also speak in terms of prototypes, which would be designed, built, or demonstrated. The word designed, there, the treaty uses the word designed as interpreted to be, they use the word test. In other words, design means test, as I understand the interpretation of the treaty.

I have used designed in the sense of design, because once we commit ourselves to a design, it seems to me it effectively breaks at least the spirit of the treaty and commits the country to it.

Now, this language is not verbatim from your 1985 report, your 1986 and 1987 reports, but the sense of it is as we understand it.

Now my question to you is this. Excuse me. The treaty uses develop.

General Monahan. Yes, sir; but not design.

CHANGES

Senator Johnston. I meant to say develop in the same sense here.

My question to you is does this appear to be consistent with the previous reports to the Congress? Was there intended to be a change between this year and previous years?

General **Monahan**. First of all, Senator, there is no intent of any change of any sort. If anything, it's perhaps the other way. I think we are on perhaps a little bit more conservative a course than we were before.

We have already looked at all of our activities for 1990 and 1991, and the treaty compliance group has given us a clean bill of health. There is nothing in there that would not be in accordance with the treaty.

In addition to that, it is my view that we may proceed for the period of the next 3 to 4 years and stay completely in compliance with the treaty, with the restrictive interpretation of the treaty, and that is our intent. That is what we intend to do, until we can get to a point, out there or 4 years from now, perhaps more like 4 years than 3 years, at which time we can come up with what is going to be the national strategy that we will follow, as far as deployment, where further development or deployment is concerned.

I would like to look at the language a little bit more carefully.

AGREED LANGUAGE

Senator **Johnston**. I would intend, of course, for you to do that. But it appears to be—I mean, I'm not trying to bind you to it—but it appears to be consistent with that, because I really think what we ought to do, early on if we could, is to get some kind of agreed language like this, which we can automatically put in, and then all of us could breathe easily that we don't have to go looking through all the reports to find something there that would break the treaty or would constitute a commitment to develop.

For example, when you look at Secretary Cheney's statement, the first language that you put up there—indicating—you can find in that language that would tend to say we need to develop this thing and do it right away, and that it is his intention to do it without congressional OK.

I don't think so, but it's ambiguous. That's why we want to nail this down.

General **Monahan**. Yes, sir.

First of all, when we speak of real serious development and just using our jargon within the Department of Defense, we mean full-scale development. Up until that time, we are in the phase that we call demonstration/validation.

That's the case with all elements of the system today. We are in the demonstration/validation phase.

Full-scale development requires that we request from the Congress another category of funds, 6.4 funds, that are full-scale development funds.

So I think that automatically puts into the system a go/no-go test as far as full-scale development of any portion is concerned.

FULL-SCALE ENGINEERING DEVELOPMENT

Senator **Johnston**. Well, full-scale engineering development on BSTS was in the 1990 budget.

General **Monahan**. Yes, sir; it was.

Senator **Johnston**. And there is a problem there?

General **Monahan**. There could be a problem there. It depends upon whether or not BSTS is deemed to be permissible within the treaty or not within the treaty.

PROBLEM WITH SSTS

Senator **Johnston**. There is the same problem with the SSTS?

General **Monahan**. Yes, sir.

Those are questions that are open at the present time, and probably won't be resolved until next winter or next spring, somewhere in there.

REVIEW LANGUAGE

Senator **Johnston**. If you will review this language, I would like to get some agreed language and would like to be a supporter of what you are trying to do.

General **Monahan**. Yes, sir.

Senator **Johnston**. I expect I will be able to be a supporter of what you are trying to do because I think it is serious science and helps us.

Now, with respect to Brilliant Pebbles. Brilliant Pebbles, of course, is an autonomous system that does not depend upon BSTS or SSTS.

Am I correct on that?

General **Monahan**. It does have one mode of operation that is autonomous. It is probably not the best mode, but it could operate without the other satellites, as we see it today.

ENVISION BSTS AND SSTS

Senator **Johnston**. It could, but do you envision it being in an array with BSTS and SSTS?

General **Monahan**. We do. As we see the system today, we do intend to use the BSTS satellite as the initial sensor, I call it the bell ringer, along with Brilliant Pebbles themselves. You know, when you detect ballistic missile launches, you like to get confirmation from independent sources, statistically independent sources. I think Brilliant Pebbles would be one source, and BSTS would be another source of information, such that you could confirm the launch.

The SSTS is not nearly as critical, indeed probably is not a critical portion as far as Brilliant Pebbles itself is concerned.

BSTS, on the other hand, could be a very big asset to Brilliant Pebbles. After all, each BSTS satellite sees one-half of the globe. So it has a very, very good big picture.

BSTS CONFIRM ATTACK

Senator **Johnston**. Are you saying that BSTS would confirm the attack, but that the targeting would be done by each Brilliant Pebble or that the targeting would be done by BSTS?

General **Monahan**. We have not worked out all of the details of that.

Each pebble, however, would have the capability to do its own targeting, and in conjunction with talking with other pebbles, other interceptors, that are in the constellation.

BRILLIANT PEBBLE TARGETING

Senator JOHNSTON. I thought the targeting was strictly by each Brilliant Pebble.

General MONAHAN. It doesn't have to be. Indeed, that is still an open issue, just exactly what would the battle management and command and control system look like.

One way to do it would be where each pebble itself would say I have a target, that's the target I want to go after, and all I need is somebody to throw some redundant switches, more or less, master arm switches, if you will, that allow them to attack.

That is one way that it can be done.

We need to do studies, however, to find out if that really is the best way.

It could also get commands through a——

EARLY R&D STAGE

Senator JOHNSTON. If I might interrupt just for a second, before deployment—and you did say it was in the early R&D stage——

General MONAHAN. Yes.

DUAL CAPABILITY

Senator JOHNSTON [continuing]. But you wouldn't put it up being dual-capable, and decide some time later. You would design it one way or the other?

General MONAHAN. Oh, indeed. We would design it one way or the other. We'd have to do that.

The design there I think would be primarily through software, and perhaps also with the type of communications equipment that goes on-board.

NUMBER OF OPTIONS

Senator JOHNSTON. All right.

Now, General, as I understand it—and this may be classified. If it is, just turn me off. I understand they were given six options under the Bush administration. Basically the difference in the various options, I mean, one was to do the Reagan approach, and the cost of that on a 5-year plan—excuse me.

PHASE I DEVELOPMENT

Senator JOHNSTON. In any event, I don't want to ask a question that could be classified.

If you were to have stuck with the prior approach and not gone with Brilliant Pebbles, you would have had to delay the phase I development, would you not?

General MONAHAN. Well, indeed, as soon as we made the reduction in funds from the $41 billion program down to a $33 billion program, that, by itself, really required that we slip out development of phase I, unless we chose——

Senator **Johnston** How much slipping is that?

General **Monahan**. In general, about 2 years, more or less.

Secretary Cheney has testified previously if we pursue the Brilliant Pebbles path and that does not work out, that would be an additional 2-year slip. We'd have to fall back to a more conventional system on the space-based architecture.

The ground-based architecture could maintain its schedule.

POSSIBILITIES OF SDI

Senator **Johnston**. General, the SDI can do many things or might be capable of doing many things.

Phase I seemed to be an interference with what you might call the patterns of attack, by dealing with only part of an attack. ALPS would be one; protection of weapons would be another; protection of cities, people, astrodome, a limited astrodome would be another.

Can you give us what is the goal of SDI at this point?

General **Monahan**. Yes, sir.

First of all, our goal, our objective is to do the necessary technical work such that, should the national leadership decide at some time in the future to deploy a system, it would indeed be possible to do.

Now, let's take that down a little bit to a couple of subsets.

The phase I system protects missile fields, it protects cities, it protects the United States, first of all. A space-based system component, though—and, remember, phase I has two layers to it. It has a ground-based layer and it has a space-based layer.

The ground-based layer protects the United States, North America. It is limited more or less——

DEPLOYMENT OF PHASE I

Senator **Johnston**. But phase I, I mean, you would not tell the people of Washington, DC, that with the deployment of phase I, at $69 billion, or whatever, that they are going to be safe.

General **Monahan**. No.

INTERFERENCE WITH SS–18'S

Senator **Johnston**. You would simply say that it is going to interfere with the order in which they can shoot their SS–18's.

General **Monahan**. Yes; it would blunt the first wave of attack.

In other words, the Soviet military planner has some objectives in mind as to what he wants to accomplish in the first wave of an attack.

Phase I of the system is designed to blunt that such that he no longer has very good assurance at all that he can achieve his objectives at the first try.

Senator **Johnston**. Are you permitted to say how many warheads phase I would intercept?

General **Monahan**. No; I am not. That's classified.

Senator **Johnston**. Well, it would not be classified to say that it would really not protect people. I mean, it would take out only a certain percentage.

General MONAHAN. Oh, it will take out a certain percentage of the reentry vehicles. It would not take out all of them.

SDI GOALS

Senator JOHNSTON. The goal of SDI, then, is the goal to enhance your response or is it really to protect people in cities, or weapons, or ALPS? Can you give us that goal?

General MONAHAN. Well, the goal is to make it much more difficult for a military planner, a Soviet planner, to be able to have any assurance whatsoever of what effect his attack is going to have.

In other words, he knows there are certain critical objectives that he wants to achieve, either destroying missile fields, destroying economic targets in this country, and he has that planned out. What phase I of the system would do is it would not let him have that kind of assurance that he could, indeed, be successful in that kind of attack.

Now, first of all, phase I would have inherently the capability of a limited protection system or an accidental launch protection system. Phase I, by its very nature, can attack reentry vehicles and boosters that are going after any target in the United States. So there would not have to be any distinction made that says that phase I can only protect missile fields, can only protect cities, et cetera.

You can make your choices as to what you want to defend. You will not perfectly defend any of it by a long shot. But, nevertheless, you will have some degree of defense.

Senator JOHNSTON. Well, I know there are a lot of different choices. But have you made a choice as to what the goals of SDI are?

General MONAHAN. Well, yes, but not from the point of view of exactly what——

Senator JOHNSTON. Only the phase I goals?

General MONAHAN. Only phase I; yes.

We know very precisely what the goals are. We know very precisely how many reentry vehicles we need to destroy, either through the space-based system or the ground based, and the combination of the two.

We do not, however, make any distinction as to whether or not we want to destroy half of those that are going after missile fields, or 50 percent of those, or 60 percent that are going after cities, or anything of that sort.

ENHANCE OR REPLACE DETERRENCE

Senator JOHNSTON. Let me ask one final, quick question. I have been taking too much time. I do have some written questions as well.

To use Sam Nunn's question when he spoke to the Arms Control Association, he asked this question, but he did not answer it. He asked is it intended to replace deterrence or enhance it?

General MONAHAN. Well, it is there to enhance deterrence. There is no question about that.

Senator JOHNSTON. To enhance deterrence.

General MONAHAN. Indeed.

Senator **Johnston.** Thank you, Mr. Chairman.

Senator **Inouye.** Thank you.

Senator McClure.

Senator **McClure.** Thank you very much, Mr. Chairman.

First, General Monahan, I would like to welcome you before this subcommittee on your first appearance before us. I think your task is perhaps one of the most vital and one of the most revolutionary programs in the defense systems today.

Perhaps it would be appropriate to say this may indeed be one of the few programs that constitutes, in a literal sense, defense. Among all the systems and programs in our arsenal, the SDI is the one that will defend our country from nuclear warheads and enhance deterrence.

I particularly noted the last question and the last answer. SDI will enhance deterrence, to insure that these warheads are never launched. SDI complicates the Soviet offensive planners' work, it complicates their problem, because there are great uncertainties. Even with an imperfect defensive system, deterrence ought to be greatly enhanced in my view.

There is a tendency among some to talk about SDI in a vacuum, as if we were the only people in the world working on strategic defenses.

It is clear both from their words and in their actions that the Soviets believe very strongly in defense of the homeland. They have spent a lot of money to try to develop such a defense.

Let me read you a quote from General Mikhail Milstein, and I do quote:

> Mutual assured destruction is not a military concept and should not be accepted as such by either side. It might be a political concept; it might be a philosophical concept; but it is not valid militarily. Whenever a new weapon system is developed, a defense must be provided against it.

Incidentally, he made this remark in 1976, when mutual assured destruction had supposedly been enshrined by the ABM Treaty.

Despite all of the changes made by General Secretary Gorbachev, and I will admit it appears there are very real changes being attempted in the Soviet Union, do you see any changes in the Soviet Union's longstanding belief in strategic defense, the defense of the homeland?

General **Monahan.** No, sir; none whatsoever.

Senator **McClure.** I am going to ask you some questions, some of which may have classified answers or answers that may, in part, be classified. If so, I certainly would invite you to identify those answers.

Mr. Chairman, if we run into that, I would ask consent that the general be permitted to provide answers in a classified form to the subcommittee.

Senator **Inouye.** It is so ordered.

STATUS OF SOVIET STRATEGIC DEFENSE PROGRAMS

Senator **McClure.** What is the status of current Soviet strategic defense programs?

General **Monahan.** Well, I think I can answer largely in an unclassified way, Senator.

First of all, I think you know that the Soviets are the only nation that has any defense of any sort against ballistic missiles. They have had deployed now for a period of 18 or 19 years the system that is in the Moscow area, which consists of, I think, it is 100 ground-based interceptors.

They began several years ago an upgrade of that system, and, indeed, they are now deploying that upgrade, which brought in new interceptors that are able to attack both in the atmosphere and outside the atmosphere.

So they have been making upgrades to that particular system. There is that, plus I think you can tell just from reading the literature that the Soviets are pursuing, we know the technology that would lead to even more robust defenses.

So I think that the complete answer is that they have a defense in being at the present time, whereas no other country in the world does.

HIGH-VELOCITY GUN

Senator McClure. What I am saying now, I am satisfied is in the unclassified arena. We know that in the 1960's, they had developed a high velocity gun to fire heavy metals at very high velocities. That is over 20 years ago.

Since then, they have been working on high energy lasers and neutral particle beams. They are working on radio frequency weapons.

Where do they stand in these efforts?

General Monahan. I am not sure that our intelligence is all that adequate in those areas to know specifically what they are doing in the way of weaponization, very specifically.

In other words, are they in some kind of stage that is akin to what we might call full-scale development, or are they back in the very basic research phases?

We know that they are at least back in very basic research phases. Other than that, I don't think our intelligence is good enough to give us a handle.

Senator McClure. I guess I could quote as an authority on that subject General Secretary Gorbachev. I think most people would think he knows what they are doing.

He stated on November 30, 1987, "The Soviet Union is doing all that the United States is doing, and I guess we're engaged in research, basic research, which relates to these aspects which are covered by the SDI of the United States."

In other words, according to his statement, they are doing at least as much as we are doing.

General Monahan. That's probably some of the best intelligence we can get, Senator.

Senator McClure. What testing activities have we observed?

General Monahan. Here we might get into some classified areas, and it becomes difficult to sort out what is classified and what is unclassified.

Senator McClure. Then would you submit that?

General Monahan. I can tell you that we have observed testing of improvements to the current ground-based system.

[The information follows:]

SOVIET TEST RANGES

Since the early 1970's, the Soviets have operated a number of elaborate test ranges to investigate the feasibility of high-energy laser weapons for a variety of missions. [Deleted.]

INVESTING RESOURCES

Senator McCLURE. In which technologies are they investing the greatest resources, and what have been the results?

General MONAHAN. I don't know their precise order of priorities or relative order. But we know that they are working very diligently in areas that you mentioned, in optics, in lasers, in radio frequency-type weapons. Indeed, I think you know that they have a manned spacecraft. So certainly they have been able to do some significant work that would support a strategic defense system by that manned vehicle.

Senator McCLURE. I would invite you to submit an expanded answer in classified form, if you would do so.

General MONAHAN. I would be happy to.

Senator McCLURE. Thank you.

[The information follows:]

SOVIET DIRECTED-ENERGY TECHNOLOGIES

Soviet investment in directed-energy technologies serves a variety of scientific industrial and military weapons and nonweapons applications. In those cases where there is evidence that the work is being carried out for strategic weapons applications the greatest known effort appears to be in the area of high-energy lasers. However, the Soviets are known to have investigated both radiofrequency and particle beam technologies for weapons applications [Deleted.]

RECOMMENDATIONS TO SDI PROGRAM

Senator McCLURE. In his famous farewell memo, your predecessor, General Abrahamson, made a number of recommendations for the SDI program. One thing he recommended is that Congress should refrain from fencing funds within SDI for particular programs or program aspects.

As the program manager who is charged with making decisions on where to make R&D investments and how to obtain the most efficient use of R&D dollars, do you think congressional fences help or hurt the program?

General MONAHAN. Personally, I think they hurt the program, Senator, because, especially when we are in a very early research phase, as we are here, we have not even entered full-scale development with any of the elements. So we are still trading off requirements versus possible specifications, preliminary specifications.

In order to do that, we have to look at technology that is working well or not working well, and determine what we may exploit and what we may not exploit. If we have fences, we are prohibited from doing that, and we might get fenced into going down a path that is not as valuable as some other path.

So, from that point of view, I think that fences hurt us, particularly when we are in the very early stage of a development effort.

INCREASE IN PERSONNEL

Senator McClure. General Abrahamson also recommended an increase in personnel and office space for SDIO, and suggested making your job a four-star billet to improve the Director's throw-weight in the bureaucratic wars.

Now, I think you also know that he specifically recommended you for a promotion.

Aside from the fact that he recommended you, do you agree with the balance of his recommendation?

General Monahan. Well, I'd probably have to take a vote on that from a lot of folks, Senator. But let me just say this.

The organization that he left when he departed is an excellent organization. We have about 260 people right there in the Pentagon today. Of course, you noted that there are about 28,000 people around the country that are working on it.

I am blessed to have a staff that has the best scientists and engineers that this country can put forward. In addition to that, we have access to members of the Defense Science Board, to academia, and the program seems to be a magnet for people who are interested in doing things on the leading edge of technology.

So that automatically attracts a lot of good people. I am just very fortunate to have them.

TECHNOLOGY REVIEW

Senator McClure. Well, I thank General Abrahamson for his recommendation. I happen to agree with it. I hope that we will, at some time, take that kind of action to upgrade the job, and to recognize that upgrading in the most obvious way possible.

The American Institute of Aeronautics and Astronautics [AIAA] recently reviewed the technology issues involved in the first phase of a strategic defense. The report found no show-stopper technology problems; in other words, no problems that could not be overcome by a well-planned technology program.

Would you care to comment on that report?

General Monahan. Yes.

First of all, I think it was a very good move on the part of General Abrahamson and others to, a little over a year ago, initiate that particular study effort. Because it is done by the very prestigious AIAA, it is a kind of peer review, if you will, of the program. Whereas they said in there, and as I say, we have not solved all the technical problems that need to be solved, and describe the type of work that has to go on, they did say that the program is designed to address those technical issues.

That is what I think you and others should find comforting, that we have a program laid out that we intend to follow which addresses the key technical issues that have to be addressed and also the cost reduction issues.

ABM TREATY

Senator McClure. I don't mean to get into the debate with my colleagues in the Committee or in the Senate with respect to either the meaning of the ABM Treaty, or the extent of it, or what our policy ought to be. I do note in the language that Senator Johnston submitted to you some language that mean something different to me than I think Senator Johnston means.

I think we ought to try to refine that, and I do invite your attention to that question.

General MONAHAN. Yes, sir.

VIOLATIONS OF ABM TREATY

Senator MCCLURE. I don't quite understand how it can be argued that BSTS is a violation of the ABM Treaty, or the Outer Space Treaty.

I don't quite understand how it, without the link of the SSTS and the other elements of the program, gets classified as a violation or a potential violation.

Would you care to comment?

General MONAHAN. Yes, sir.

First of all, I mentioned earlier that the people who are charged with the responsibility for determining treaty compliance, with this treaty as well as with others, are dedicated to doing a very, very thorough and very comprehensive job. That is why they have not made any statement just yet as to whether or not BSTS is, indeed, compliant.

BSTS itself is still in the demonstration/validation phase. We don't have the final specification written.

So I can understand why it is difficult for people that have to be very sure about treaty compliance, that they can't make a ruling at this time.

I am very close, though, to what we are doing within BSTS and how we're writing the specifications, and what the open issues in the specifications are right now. I feel confident that we can come up with a specification that is treaty-compliant with BSTS. I can't say so for sure at the present time. But, this is because BSTS has a very important role of threat warning and attack assessment to perform, in addition to the contributions it makes to SDI. It makes the same contribution to other strategic forces.

Senator JOHNSTON. Would the Senator yield?

Senator MCCLURE. I'd be happy to.

ABM PHASED ARRAY RADAR

Senator JOHNSTON. In simple terms, a BSTS could be a Krasnoyarsk in space, an ABM phased array radar in space, to direct these weapons. Indeed, that is the way the general said it might be done for phase I.

BSTS

Senator MCCLURE. Well, I would say to my friend that, indeed, BSTS could be a variety of different things. But BSTS isn't a variety of different things. I would agree with the general that at this current time, we don't know exactly what it is.

I can't quite extrapolate in my own mind the possibility that, because it might be conceived or designed to potentially operate in a way which would be a violation of the treaty, it necessarily is a violation of the treaty.

That is the point I am trying to make.

Second, and again this gets us into very basic disagreements that have wracked the Senate for some time, is whether or not we ought to be held to a standard of total and strict compliance with agreements that the other side is already violating.

Now, frankly, to me and my commonsense folks out in Idaho, that is just plain nutty, to hold ourselves to a standard that the Soviets do not comply with. The Senate has, upon a number of occasions, said that we are free to take actions which are necessary to protect our own security proportionate to the violation by the Soviet Union.

The Soviet Union has violated the ABM Treaty, is violating the ABM Treaty, and for us to say that in spite of that we are to be held to a strict compliance standard does not make sense to this Senator.

Again, quoting the Soviets and not any American Senator, it was Minister of Defense Grechko, who, shortly after the signing of the ABM Treaty in 1972, told the Soviet Presidium that the treaty places no limitations whatsoever on the conducting of research and experimental work directed toward solving the problem of defending the country from nuclear missile strikes.

For us to adopt language which would prohibit the benefits of the research from a program seems to me to be wrong; although, certainly, there is a difference of opinion on that subject. Certainly I understand those who like our current posture and don't want us to change it, pending the outcome of congressional debates in the future, as well as future technological changes.

Mr. Chairman, one final question. Maybe you could submit more details for the answer.

I note in your presentation, General, one reference with respect to the development of production techniques for solar cells production.

I would like to know in some detail exactly what you are talking about, who is performing the work, and at what level that work is being coordinated with the work that has already been done in the past with the Department of Energy and at the national labs.

General MONAHAN. I'll be happy to provide that for the record, Senator.

Senator MCCLURE. Thank you very much.

[The information follows:]

MANTECH SOLAR CELL PROGRAM

The Electronics Division, Manufacturing Technology Directorate, Wright Research and Development Center, Wright Paterson AFB, OH (WRDC), is funding a three (3) year solar cell program titled "MANTECH for Rugged thin GaAs Solar Cells." The program was awarded to Applied Solar Energy Corporation (ASEC), City of Industry, CA, on September 29, 1988. The objective of this program is to establish techniques for cost effectively manufacturing large quantities of highly effficient, lightweight, radiation resistant space qualified GaAs solar cells. The program is building on R&D work demonstrated by the Aero Propulsion and Power Laboratory, WRDC, which will meet future military mission requirements. The total contract value is $2,716,405, which includes $500,000 to be provided by the BSTS Program Office in fiscal year 1990 and $278,000 supplied by SDIO, through the Aero Propulsion and Power Lab, for high temperature contact development, MANTECH is providing $1,938,105 under program element 78011F. The program is not duplicating the activity at the Department of Energy. The basic cell designs are similar but DOD and DOE requirements for flat panels and concentrator cells are different.

We have made DOE aware of our activities through the Power Information Center, Washington, D.C., which maintains a data base on all solar work being performed by all the government agencies. Captain Willie Pope briefed the program to the Interagency Advanced Power Group, Solar Photovolatic Panel, on May 23, 1989. At this meeting, the group concluded that no conflict exists with any of their planned or on-going efforts. We are fostering technology transfer by maintaining an accurate distribution list and reporting information in a timely manner.

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

Senator INOUYE. Senator Hollings.

Senator HOLLINGS. General Monahan, welcome.

I like and commend your deliberate approach and very careful responses. Don't be drawn into policy.

You notice most of our questions are with respect to policy and politics.

On the politics of it, there have been all kind of assaults from those who really oppose SDI. One assault is that it is forbidden by the treaty. Another is that it won't work. A third one is that it is outrageously costly and you never could afford it.

With respect to the criticism that it will never work, SDI opponents have fed us to the point of gout, bringing in experts who said that you couldn't get from here to there.

Can you, General, please elaborate on the analysis by the American Institute of Aeronautics and Astronautics, its summary and review and how long did the study take?

Tell us the composition of the study group. You call it prestigious. But I would like for the record to be elaborated upon. Tell us about the composition, the time taken, and the objectivity of this particular review.

General MONAHAN. Well, Senator, the AIAA took about 1 year to do the effort. They looked at the program technology by technology, item by item, element by element. There are specific chapters that look at each part of it. They looked at the problem with optics. They looked at problems with software. They looked at problems associated with battle management. They looked at the problems associated with focal plane arrays.

They kind of ran the gamut of all the key technical issues and key technical questions that confront us within the program.

So I think from that point of view it was a very thorough look at the technology associated with SDI.

I think that they didn't say that the technology is here today. They said that we know what has to be worked, what has to be done, and we have a program in place to do so, and that the chances of being successful are very high.

I think that's about as good an encapsulation as I can give. In other words, they are saying that it is the sort of thing that is very worth doing. You're not out taking a tremendous technical risk here, a tremendous risk with a high chance of failure.

Senator HOLLINGS. Right. Will you elaborate later for the record? I take it you would not have the names now, but could you give us the names of those engaged in the study?

General MONAHAN. Yes, indeed.

Senator **Hollings**. I think the Committee would like to look at that from the standpoint of the experts involved.

General **Monahan**. Yes.

[The information follows:]

AIAA CONCLUSIONS ON SDI PROGRAM REVIEW

I believe the AIAA reached three significant conclusions following their review of the SDI program. First, AIAA concluded that "no issues were identified whose resolution could not be accomplished by the actions suggested herein, and no fundamental obstacles were found that a well-planned technology program could not surmount. Secondly, AIAA concluded that "no insurmountable technical barriers appear to impede the successful development of adequate hardware and software for onboard signal processing and data processing, which has been a widely held concern ever since the inception of SDI. Finally, in the summary, AIAA concluded that "deployment of a Phase I strategic defense system able to meet the mission criteria defined by the Department of Defense depends on the resolution of technical issues that are currently being addressed."

A list of participants in the AIAA review follows.

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PHASE I BRILLIANT PEBBLES

Senator HOLLINGS. Now, jumping quickly because the hour is late and we all have to leave, with respect to the cost of SDI as the argument that you can't afford it, as I understand it, phase I costs could run like this. Brilliant Pebbles is $10 billion. The surveillance and the satellite systems are $11 billion. The command and control support structure is $4 billion. The ground-based systems are $25 billion. All make for a total of some $50 billion.

Am I right, or what is the correct figure?

General MONAHAN. Well, Senator, I believe I mentioned during the presentation that one thing we are going to do this summer is an in-depth cost evaluation of Brilliant Pebbles. We are going to do that at the same time that we are doing a technical evaluation that investigates the problem of whether or not it is sound.

So I think we have to do the in-depth evaluation first, before I can give you what I think is a reasonably accurate assessment of what the cost might be.

At the present time, I have had too many inputs that have too much variation in them. Some are high, some low, and based on many different assumptions.

We need to look at that much more carefully.

FIGURES

Senator HOLLINGS. Well, these are ballpark figures, aren't they, the ones that we've tried out best to find out?

General MONAHAN. Yes.

One figure that I think has some rigor to it at the present time, and I think conservative rigor, is the $69.1 billion associated with phase I.

By the way, that figure encompassed a space-based architecture as well as a ground-based architecture, and command and control and the sensors, interceptors, et cetera.

What Brilliant Pebbles does is it affects the space-based architecture, assuming that we would want to pursue a two-layered system—in other words, both space based and ground based.

That being the case, the portion of the $69.1 billion that was associated with the space-based interceptor was $17 billion. So that is the portion that has the most opportunity to be reduced by going to a Brilliant Pebbles type concept.

Senator HOLLINGS. So, the $69 billion is nearer to the top of the mark, and it could be reduced.

General MONAHAN. Yes, sir; that's the top.

Senator HOLLINGS. Compared to the recent testimony by the Air Force itself regarding the B-2 and its costs, is that the cost is now $75 billion. That is for the B-2, Stealth program, and here we have an upper figure for SDI of around $69 billion. Remember that's the upper figure. That is just the B-2, as only one phase of our strategic offensive weapons.

Of course, you have all the ICBM's, the Minutemen, the MX's, the Midgetmen, the Trident's, and all and on and on. The figure thrown around for offense is $2 trillion. That should really apply to strategic offense. What you and I are dealing with is anywhere from $50 billion to $69 billion for strategic defense.

I'm trying to bring that in, General, because we have been through that exercise. First they fed us to death with people saying that it couldn't work; now we find out that it can.

Second, you couldn't afford it; now we find out that it's cheaper.

Then, the third thing is to have some kind of fence on your program and the funds. I am reverent and really respective of treaties. This is the Congress. It was Harry Byrd, not West Virginia's but Virginia's Senator Byrd, who put in the law that was signed, with three readings in the House and three in the Senate—I'll show it to you in 1980—that the budget shall be balanced.

So we are all violators.

We then had Gramm-Rudman-Hollings, and we are all liars. I put up a bet at the time we passed the fiscal year 1990 budget resolution in the Senate, and I put it up again when its supporters claimed on the floor they had brought the deficit down to $100 billion. I said it's nearer $150 billion, so you name the amount and the terms of the bet, the odds, whatever you want. I'll make the bet with you, General, if you want to, or with anybody else around this Congress.

But they won't take that bet because they know differently.

Now we come to the ABM Treaty itself. Just one more second, Mr. Chairman, because we have all been into it. We have had from the very beginning, the American position was to ban future ABM technologies. That's the negotiation record.

The biggest mistake we ever made on the debate with Senator Nunn was he was using the ratification record, which were very dim and very indirect and very incomplete and very misleading.

I happened to be on the floor on the afternoon the ABM Treaty passed the Senate. Senator Mansfield was begging people to come to the floor and talk. Nobody wanted to talk and the few that did appear, do you know what they talked about? About SALT I, not ABM. Just look at the record.

It's a very interesting record made on the ratification of ABM. But in the negotiating record, General Monahan, we insisted on a bar on future technologies, and could not get it. "Nyet, nyet," they said time and time again.

As a result, Gerard Smith, Paul Nitze, Harold Brown, Adm. Thomas Moorer, Gen. Bruce Palmer, Gen. Royal Allison, Victor Karpov—they have all spoken in one voice about the parties to that treaties right to test and develop.

That is what I am talking about when the Senator from Louisiana starts with one of these fences about development—talking about in order to get in step with the treaty.

Oh, no, no, no.

Let me be specific.

Gen. Royal Allison, on June 21, 1972—and I met him in the tent in Helsinki, in August, 1971—they had finalized it, practically, at that time, though it wasn't ratified until the first part of 1972. But in August, 1971, I met him, and we talked to him. I'm quoting him, not just then, but he said this on the public record: "Constraints in the treaty apply to deployments only. Research and development are not constrained. The U.S. Delegation, under instructions, sought a clear-cut ban on development of future ABM systems, but the Soviets would not agree."

Finally, Gerard Smith, Ambassador Smith, testifying in 1972, said, and I quote—this is agreed statement D—"One of the agreed understandings says that if ABM technology is created based on different physical principles, development work, research, is not prohibited; but deployment of systems using those new principles would not be permitted unless both parties agree by amending the treaty."

So I think that, when we fence and dance around and when we find out we can't prove that it cannot work, but, rather, that it can, and yes, it is cheaper, rather than not being able to afford it, now let's don't go off and get caught up in this strategy about the treaty itself.

I'll ask a question here. Is there a red cent in your appearance here and your request this morning for deployment?

General **Monahan**. No, sir.

RESEARCH, TESTING, AND DEVELOPMENT

Senator **Hollings**. All right. That is the thing to make absolutely clear, because what you are asking for is research, testing, and development.

If and when we reach the point, we'd have to vote it. And if we got to that particular point, rather than to wrangle, we could use article XV of the treaty, under national security provisions, and go ahead and deploy. I think if we ever got that kind of majority in an administration and a Congress, we would not have to worry about these intramurals that are going on every time you appear before a committee.

I only bring this up and highlight it so that you get immediately an experienced feel for what is going on and why the questions are being asked and why the fences are being presented.

They don't want it. I happen to want it. And I'm making progress every day. It works and you can afford it, and now we have a deliberate lieutenant general here who, by gosh, will go along, and let's see how we can develop it. We have the experts' report, and I think that is very, very important.

Nobody is going to wake up and find Brilliant Pebbles deployed.

The idea there is that you can't trust the administration. You can't trust the Congress. I'll conclude on this comment because it has never been made.

One of the most respected members—and I sure respect him—Lee Hamilton, on the other side, at the time of the North Jury said the system worked.

Oh, no. The system got off free.

General, you're looking at the system. You're looking at the Committee that sat in day in and day out, and particularly the Senator from Louisiana, and when we'd get to the Boland amendment, we'd say wait a minute, we're not going to agree to that, the administration is not going to take it. And the administration would come around, Mr. Chairman, and say don't worry about it, don't worry about it, we'll sign it, we're not worried about that.

That's the system that got a good Marine, Ollie North, into the criminal court. And that's why we had five Boland amendments. It was cops and robbers. We were trying to catch them, and we kept rewording it. We said this time no intelligence agency. Every time they reworded it, we didn't think the administration would accept it. But they said don't worry about it because it doesn't bother us, and they kept on doing it anyway.

The system has gotten off free. The system didn't work, when we said it worked.

So you are into the same kind of thing. This is history repeating itself on your particular initiative. So don't get caught up in it.

We do appreciate your appearance, and we will be working with you. Men of good will will find out whether this thing is feasible, economically affordable, and makes sense. To me, so far, it has been a wonderful initiative. I think it was over-described by President Reagan when he spoke of the umbrella. He just over-spoke.

Now the words used, maybe these are over-descriptions, too, Brilliant Pebbles, Hard Rocks, all of them are fancy names, and Peacekeeper. Maybe we ought to get somebody to bring it all down to reality.

But we do appreciate it.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Bumpers.

Senator BUMPERS. With all due respect to my distinguished colleague from South Carolina, we woke up one morning and found out that we had bombed Cambodia. We woke up one morning and found out that we had bombed Laos. We woke up one morning and found out that we were negotiating with that Nobel Peace Prize candidate, Rafsanjani.

We have waked up a lot of time around here and found out that things happened that Congress did not intend and knew nothing about.

My question this morning on that point, General, was in light of the fact that sometimes things don't happen the way Congress intended and things do happen that Congress did not know anything about.

As I say, I want to extend my compliments to you again because I think you are a very credible witness and I have appreciated what you have said this morning. I have learned a great deal more about the technical part of this this morning than I have with a lot of other briefings.

On the blue team/red team, General, I take it that that is where you use every effort to defeat the system.

General MONAHAN. Yes.

Senator BUMPERS. I know that a lot of that is classified. I have sat in those classified briefings, and I might also say that that list seems to grow all the time. We think of new things that the Soviets might do to defeat it, and we think of things that we want to do to see if we can defeat it.

Here is a little bit of a paper that was prepared by Christopher Cunningham at Lawrence Livermore on space-based interceptors. On page 275, here is what he says, as performance against representative threats.

SHORT BOOST PHASE

What it says here is—and I know, of course, that you agree with this—the shorter the boost phase and the shorter the bus phase, the more difficult our chore.

That's a fair statement, is it not?

General **MONAHAN**. I believe that's true. Yes, sir.

THREAT OPTIONS AND PARTICIPATION

Senator **BUMPERS**. Under table II, threat options and participation, for example, it says, on the current liquid propellants of the Soviet Union, for example, the boost phase, on the 15 warhead MIRV'ed system, current liquid would be 300 seconds in the boost phase. But that could be modified with a liquid system to cut the time to 240 seconds.

In a system, for example, like the SS–25, the current solid system would have 180 seconds; but that could be cut with a solid fuel to 150 seconds, or a reduction of 30 seconds.

It goes on down, from the fast bus solid, 150, to a fast bus/fast burn, 100 seconds.

When you consider the fact that on a cloudy day it might be 30 seconds before our sensors could pick it up, that only leaves us 70 seconds of decision-making time, and complicates, as I said earlier, the defeat of these warheads and missiles.

Now, Mr. Chairman, I just have three or four questions and I will be as brief as possible.

Is it worth deploying any one of these phases if the results are less than a 100-percent kill?

General **MONAHAN**. First of all, Senator, no system will achieve a 100-percent kill. But what is an acceptable kill rate? Is it 60 percent, 70 percent, 80 percent?

Senator **BUMPERS**. You have anticipated my next question.

General **MONAHAN**. Then, if you build that in layers—let's say, for example, that it's 80 percent if you have two layers. If you only have one layer, that means 20 percent get through. But if you have two layers, that means only 4 percent get through.

So, if the Soviets launched, let's say, 1,000 missiles, and out of the 1,000 they expected to hit 500 targets, putting two on each target. Well, all they can do now is hit 20 targets, instead of being able to hit 500. So, I think that shows how greatly it complicates his problem, because now, when he had planned to hit 500 targets, knowing that you're going to come after him, now he has to say gee, I can only hit 40.

So I think that really is a major deterrent against him taking action.

Senator **BUMPERS**. I think, General, it is very important that Congress know your very best estimates at each phase what we are getting.

General **MONAHAN**. Yes.

SCENARIOS

Senator **BUMPERS**. I think we need to know also what we get under a series of scenarios that the Soviets might use to defeat that particular system. I have seen press reports, for example. I think the Joint Chiefs have their own views, and that is classified. But I have seen press reports that say Brilliant Pebbles could not get more, say, than 50 percent of the SS–18's, and the SS–18 has, by far, the longest boost and post-boost phase of any Soviet missile.

I think we could assume if we could get 50 percent with Brilliant Pebbles, we are likely to get less than that with some of the other missiles.

Is that a fair statement?

General MONAHAN. Well, Senator, the number, the effectiveness of that layer of defense, space-based defense, be it Brilliant Pebbles or something else, is a function of a number of things. But one of the most important, of course, is how many Brilliant Pebbles are there.

So, one way to kind of work that problem is if you want 50 percent effectiveness, or 70 percent, or 80 percent, et cetera, is to add the right number of interceptors. I don't know exactly what that number is.

Senator BUMPERS. Well, if that is correct, could we not then deploy enough Brilliant Pebbles to get 100 percent of them?

General MONAHAN. I doubt seriously that you could do that. I think you are finally going to run into the knee of the curve. I don't know if that occurs at 80 percent or 90 percent. But pretty soon, to get an additional percent, you are going to have to deploy far more than you could possibly afford.

EFFECTIVE SYSTEMS

Senator BUMPERS. Well, General, the Senator from South Carolina is correct. You are not a policymaker. The administration is, and the Congress has to ratify that policy. But we have to get the very best technical information.

At some point we are going to be called upon to determine, for example, that if none of these systems are effective against the cruise missile, we have to ask ourselves if the Soviets steadfastly refuse to eliminate nuclear tipped sea-based cruise missiles, what would keep them from putting a whole series of surface platforms off our coast and loading them up with cruise missiles; or, for that matter, even going to a strategic bomber.

We have to take all of that into consideration, along with how many are likely to get through the very best shield we can put in space. Then we have to ask ourselves are we really defending ourselves or are we just cutting down how high the rubble is going to bounce.

That is a decision that we have to make, and it is very important for us, General—certainly in a classified session, Mr. Chairman—to get your and the Chiefs' best judgments on these things.

General MONAHAN. Yes.

Senator BUMPERS. There is a cost beyond which I don't think the hawkest of the hawks in the Senate would be willing to go, if the cost is just staggering, prohibitive, and going to bankrupt the Nation even more than it is already bankrupt. We don't want to do it.

But I will say that I feel a little more comfortable with you in charge, and I think we are going to get accurate information from you, and I am pleased by that.

Thank you, Mr. Chairman.

Senator **Inouye**. Senator Johnston.

Senator **Johnston**. Thank you, Mr. Chairman.

General, you used some figures, 60 percent or 80 percent of the warheads coming through. You are not suggesting that phase I does anything like that of the total amount of warheads available? You didn't mean to give that suggestion, did you?

General **Monahan**. Oh, no; I did not. That is classified information.

Senator **Johnston**. I just wanted to be sure.

We still do stick to the Nitze test, don't we, of cost effectiveness at the margin?

General **Monahan**. Indeed.

One thing that is still fundamental in the program is we observe the Nitze criteria.

COST OF PHASE I

Senator **Johnston**. General, you said that phase I has an estimated cost now of $69 billion, and that you hope that is a conservative cost, and you want to get that cost down. That is in 1988 dollars.

General **Monahan**. Yes, sir.

Senator **Johnston**. The then-year dollars would be 1989 or 1990, would it not?

General **Monahan**. The then-year dollars would be the years in which the expenditure actually occurs.

Senator **Johnston**. I have here testimony to the House, and it uses $90 billion then-year dollars. I know that involves an estimate of what inflation is. So it will be about $90 billion.

General **Monahan**. Depending on, first of all, if we had proceeded on the course that was in the previous President's budget and had a schedule that went with that, and if——

Senator **Johnston**. Oh, I know there are a lot of ifs. But let me get to the real question that I have here.

In the 5-year defense plan, which was previously submitted, they had $43.5 billion, in that previous 5-year defense plan. I think it is now $33 billion.

General **Monahan**. Yes.

Senator **Johnston**. Of that, the answer to the House was, of that amount, about $15.5 billion, or 35 percent, is planned funding for the phase I system.

General **Monahan**. Yes.

PERCENTAGES

Senator **Johnston**. Now, the amount has been reduced from $43.5 billion to $33.5 billion. Is that same percentage still applicable?

General **Monahan**. I don't know the specific answer. We've worked out the numbers, but I have not worked out the percentage yet. But I think it is pretty close. It still must be pretty close.

Senator JOHNSTON. That would probably be applicable to the second 5 years as well, would it not?

General MONAHAN. No; I believe in the second 5 years beyond that, that the ratio of funds would go to production of phase I, versus follow-on systems—probably higher in favor of Phase I, after you get out beyond about 1994.

Senator JOHNSTON. After about 1994, it would be maybe 50-50?

General MONAHAN. Could be. I'd have to check.

DEVELOPMENT OF PHASE I

Senator JOHNSTON. The point here is if we were going to go to development of phase I, the cost would not be $69 billion. You would start at $90 billion of then-year dollars, and then you would have the additional cost, which would be the development of phase II and phase III, which would add at least that much more. So we're probably talking about a figure of $200 billion of then-year dollars that would be spent during the time that phase I was being developed and deployed.

Is that right, in general terms?

General MONAHAN. Well, I don't know about exactly what the total would be in that same time period. I don't think it would come out that high personally.

Senator JOHNSTON. Or maybe $150 billion, in that order of magnitude?

General MONAHAN. I'd have to go back and look at some more data. But, first of all, the $90 billion figure you quote had an assumption for what inflation is going to be that went with it. So we are really crystal-ball gazing there, because nobody knows for sure.

Senator JOHNSTON. I hope that wasn't based on a 5.5-percent interest rate forever.

General MONAHAN. Well, we used the DOD indices that were there at that particular point in time.

But there is another aspect to it, too.

As I said earlier, I think the $69 billion is a very, very conservative estimate. I think that we can, and we should, do better. I think that is one of the major things that we need to look at over this period of the next 3 to 4 years, to find out can we reduce the cost of this. We need to work the problem to see if we can make it more affordable.

That's one of the major things I want to do.

Senator JOHNSTON. But the point here is that the $69 billion, or if you can get it down to $60 billion, or whatever you can get it down to, does not include the tech base, it does not include what you would have to do on the development of phases II and III——

General MONAHAN. That's correct.

CONFIDENCE IN PHASE II AND PHASE III

Senator JOHNSTON. Because there is all the testimony from people like General Abrahamson, General Herres, and others that it would not be feasible or proper to deploy phase I without some degree of confidence in phase II and phase III because of the degradation that everyone predicts for phase I.

Isn't that correct?

General MONAHAN. I agree. Yes, sir; that's true.

AMOUNT OF MONEY

Senator JOHNSTON. So we're talking about at least double the number of dollars that would be spent during phase I for things that are not related to phase I.

General MONAHAN. I don't know if it's double, or exactly where. But it is more, there is no question about that.

We would have to spend dollars for the technical work that supports both phase I and phase II, and then, of course, development work for phase II.

I don't know what exactly the numbers are.

Senator JOHNSTON. Thank you very much, General.

Thank you, Mr. Chairman.

Senator INOUYE. Senator Hollings.

Senator HOLLINGS. Just one final question.

MONAHAN DEFENSE SYSTEM

General, with respect to costs, you'd better set up the Monahan defense system. Specifically, I'm a Senator, let's say, and I'm for the V-22 Osprey, or I'm for the F-14, and I say well, in order to find my money in this debate, I've got to take it away from SDI because I already have 40 votes against SDI, and so I can pick up a few more, and that's how I can cut back $200 million, $1 billion, or whatever it is. You'd better start programming the optics, the costs of the focal plane array, and just go right on down the list and find out what these denials are because Congress is famous for reprogramming, stretching out, and everything else, and then coming up 2 years from now and saying General Monahan was a failure. We were supposed to have done this by now and look at how much more it has cost, and everything else of that kind.

So you're into that briar patch.

What we really want to know is the cost of things—not so much the technology, because we'll never understand it. I don't understand how a plane flies right this minute. [Laughter.]

But I do understand cost. When I'm trying to grab some of your money, you'd better say well, when you grab it, here is where it is going to put us, or this will delay it. But you'd better be forthright in it so that we'll all understand it.

General MONAHAN. Yes.

Senator HOLLINGS. Thank you a lot, Mr. Chairman.

Senator INOUYE. General Monahan, on behalf of the subcommittee I thank you for your clear testimony and your very candid responses to our questions. I can tell you that it has been most helpful.

If there is any way of rating, I would say your performance here was a four-star performance, sir.

ADDITIONAL COMMITTEE QUESTIONS

Needless to say, you have a most difficult job, and we wish you well in your endeavor. We look forward to sitting with you once again to study the report when it is issued.

We will submit the balance of the questions for your response.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

SDI - Unanswered Cost, Schedule, Technology and Effectiveness

QUESTION: What do you consider to be the key unanswered cost, schedule, technology, and military- and cost-effectiveness questions about SDI? Do you consider the work remaining to answer each of these principal questions to be a "high, medium, or low" risk effort?

ANSWER: The design and development of the Strategic Defense System (SDS) is a complex process that considers many items:

-the forecast enemy threat

-the cost and timeframe of that threat

-the current U.S. technology base

-the U.S. technology development opportunities and their cost and schedule

-the technical design of an architecture of sensors, weapons and support systems that perform the SDS mission against the enemy threat, incorporating cost-effective and survivable technology

-the cost and schedule of the architecture development and deployment

The SDS development process seeks to manage all of the above information to arrive at a balanced and cost effective approach to mission accomplishment within established fiscal constraints. The key question regarding this process is and has been "what will the funding be?" Fiscal turmoil, especially that occurring very late in the planning cycle, has continued to make the planning and development of SDS an extremely difficult task.

QUESTION: Under the revised SDI budget, when will the United States breach the narrow, or traditional, interpretation of the Anti-Ballistic Missile Treaty? Which specific SDI programs will constitute this breach? When will Congress and the Administration have to decide whether to fund such activities?

ANSWER: All tests within the SDI program are reviewed by the DoD Compliance Review Group for compliance with U.S. international treaty obligations. The Compliance Review Group has approved tests in the FY 1990 and FY 1991 time frame as ABM Treaty Compliant. These are documented in the 1989 Report to the Congress on SDI. In cases where the details of individual tests are still being developed, approval is subject to review of the completely defined test.Future testing will be reviewed as detailed plans become available. In the event that future testing is conducted under the provisions of

Agreed Statement D of the ABM Treaty, the President is committed to consult with Congress and our allies as appropriate.

QUESTION: Does the Bush Administration intend to comply with the "narrow" versus "broad" interpretation of the ABM Treaty in its conduct of the FY 90 and FY 91 SDI programs? Will it comply with the "narrow" or "broad" interpretation just in terms of "testing" as your briefing chart states, or also in terms of developing systems prototypes?

ANSWER: All tests within the SDI program are reviewed by the DoD Compliance Review Group for compliance with U.S. international treaty obligations. The Compliance Review Group has approved tests in the FY 1990 and FY 1991 time frame as ABM Treaty Compliant. These are documented in the 1989 Report to the Congress on SDI. In cases where the details of individual tests are still being developed, approval is subject to review of the completely defined test. Future testing will be reviewed as detailed plans become available. In the event that future testing is conducted under the provisions of Agreed Statement D of the ABM Treaty, the President is committed to consult with Congress and our allies as appropriate.

QUESTION: Two years ago, now-National Security Advisor (Lt. Gen.) Brent Scowcroft co-authored a study on SDI and American Security which concluded that "adhering to the ABM Treaty in its traditional form would not seriously hamper a sensible research and development program for another decade." Do you agree with General Scowcroft's assessment?

ANSWER: All tests within the SDI program are reviewed by the DoD Compliance Review Group for compliance with U.S. international treaty obligations. The Compliance Review Group has approved tests in the FY 1990 and FY 1991 time frame as ABM Treaty Compliant. These are documented in the 1989 Report to the Congress on SDI. In cases where the details of individual tests are still being developed, approval is subject to review of the completely defined test. Future testing will be reviewed as detailed plans become available. In the event that future testing is conducted under the provisions of Agreed Statement D of the ABM Treaty, the President is committed to consult with Congress and our allies as appropriate.

SDI Costs and Costs Reductions

QUESTION: The latest cost estimate for acquiring and deploying the first phase of a Strategic Defense System has decreased dramatically--from $115 billion to $69 billion in constant FY88 dollars.

The General Accounting Office has testified that some of the assumptions upon which the much lower estimate was based were optimistic. It is said that some of the major cost reductions were based on technologies not yet even developed.

How much of this latest cost estimate is based on not yet developed technologies?

ANSWER: The GAO's concerns were that: "SDIO has assumed that the technology required will be available when needed, that contractors will be successful in developing and implementing innovative production processes and techniques to significantly reduce the cost of the system, and that the program can stay on a relatively tight schedule." The changes in producibility that SDIO anticipates for SDS Phase I are expected to occur as a result of early emphasis on design for producibility, significant planned investment in plants and procedures, novel system requirements such as mass production of identical (as opposed to "one of a kind") satellites and very high-rate satellite production.

The SDS Phase I system design and development effort utilizes near State-of-the-Art technologies in determining the systems' design configurations. Some of the technologies being developed and demonstrated to support the SDS Phase I include miniaturization of components, hardening for survivability, lightweight designs, software algorithm development, as well as several producibility methods. All technologies underlying the design of the Phase I cost estimate are currently in development or have already attained the required Phase I levels even though some of the technology has yet to be demonstrated in an operational environment.

SDS Phase I schedules are the result of analysis based on historical data and planned element program characteristics. These schedules are well within the feasible range based upon what has been accomplished in the past. They may indeed be toward the optimistic side of that range, but we are confident that, with proper management and funding stability, they can be realized.

Both the current and former architectures incorporate "not yet developed" technologies appropriate to the respective design approach. These technologies are reasonably expected to be available when needed given the continued evolutionary development of our technology base.

QUESTION: Why did OSD Cost Analysts disagree with SDIO Cost Analysts and by how much?

ANSWER: The OSD Cost Analysts accepted the SDIO cost estimate. The DoD Cost Analysis

Improvement Group's concerns were: "Achieving the 'business as it should be' assumptions for production costs remained a significant challenge, and schedules remained optimistic."

"Business as it should be" refers to the changes in producibility that SDIO anticipates for SDS Phase I. These changes are expected to occur as a result of early emphasis on design for producibility, significant investment in plants and procedures, and novel system requirements such as mass production of identical (as opposed to "one of a kind") satellites and a very high-rate of production.

SDS Phase I schedules are the result of analysis based on historical data and planned element program characteristics. These schedules are well within the feasible range based upon what has been accomplished in the past. They may indeed be toward the optimistic side of that range, but we are confident that, with proper management and funding stability, they can be realized.

SDIO will continue to sponsor research that will aim at reducing both the costs of systems due to performance requirements and the costs of systems due to administrative and regulatory requirements, and continue to emphasize the importance of how much a system "could cost." Our goals are a properly balanced architecture that allocates functions in the most economical way, and an industry that efficiently adds value to its products using the most appropriate technology and capital base. SDIO will continue to set challenging cost objectives, and will continue intensive efforts at cost reduction.

We are reviewing alternative architectures and technologies that could result in the cost estimate being substantially reduced from $69 billion. Phase I has just entered the Demonstration and Validation phase; it is at a very early stage in the acquisition process and cost estimates can change. We anticipate bringing the total acquisition cost of Phase I below $69 B-88.

QUESTION: What are the cost impacts of the schedule delays and program changes caused by the latest budget reductions in the SDI program?

ANSWER: Impacts to the acquisition cost of the SDS architecture due to recent budget reductions can not yet be assessed. Slips in technology development and the Demonstration/ Validation of SDS elements must be assessed to determine impacts in operational capabilities and schedules. Replanning will be accomplished through the first half of FY90 to determine the full impact of these recent budget reductions.

QUESTION: According to your organization, SDI's FY90-92 program must "establish credible cost estimates for each of several feasible alternative systems," comprising Phase One or Phase Two of a Strategic Defense System.

Which cost estimates do you not consider credible now? How does this lack of credibility affect the overall estimate of $90 Billion for Phase One Defenses?

ANSWER: The October 1988 DAB approved estimate of $69.1 Billion has undergone DoD standard estimating procedures and more recently was reviewed by the GAO for consistency and reliability. All SDI estimates released by the DAB, following a complete review by SDIO, are credible estimates.

Each subsystem of the October 1988 DAB Baseline Phase I system is reviewed for cost each year to determine impacts of technology breakthroughs, revised threat assessments, cost reduction implementation impacts and other factors which can influence cost. The insertion/replacement of a new architecture element, such as Brilliant Pebbles, to the currently defined architecture is a perfect example of how SDIO continues to investigate alternative systems which will, first, meet JCS requirements and, second, reduce overall system cost.

SDI Technical Risks

QUESTION: SDI is described as a "system of systems." At least two of the systems upon which Phase One defenses are based are considered "high risk" projects according to the program offices responsible for their development. These are the satellite sensors essential for intercepting Soviet missiles and warheads in the boost phase and mid-course phase--the Boost Surveillance and Tracking System and the Space Surveillance and Tracking System.

Do you agree that each of these systems is a "high risk" system?

Are there other "high risk" systems in the Phase One and Phase Two defenses? What are they?

ANSWER: Many of the programs in SDIO involve development in which some particular aspect involves "high risk" activities. That is, a specific component may represent a technical challenge, but the entire system is not necessarily "high risk." Moreover, SDIO recognizes where challenges exist and incorporates a variety of techniques to mitigate associated risk. Specifically, upon identification of "high risk" activities, backup approaches are pursued such as alternative technology paths, innovative concepts and multiple competing contractors. Finally, pursuits of alternative systems to meet similar requirements are also part of SDIO's efforts to ensure backups. These challenges both draw upon and extend the broad technology base available through SDIO's efforts.

QUESTION: Have the latest budget reductions increased the technical risks to the key Phase One and Phase Two programs?

ANSWER: Technical challenges are part of each and every technological advance contributing to our national defense. When budget reductions are placed on "leading edge" technology developments, opportunities for innovation and competition are limited. Fewer promising alternatives can be pursued and choices must be made earlier in the development process--perhaps prematurely. Moreover, efforts to research follow-on capabilities currently reside in conceptual studies and laboratory experiments; associated risk cannot be determined at this time.

"Brilliant Pebbles" Issues

QUESTION: Former SDI Director (Lt. Gen.) James A. Abrahamson predicted "Brilliant Pebbles" space-based interceptor technology could be proven in two years and deployed starting three years later. He claimed all this could be done for less than $10 billion. You have indicated much more analysis needs to be done to evaluate Brilliant Pebbles cost, technology and feasibility.

Do you disagree with General Abrahamson's predictions about Brilliant Pebbles? With so many unanswered questions about Brilliant Pebbles, why has this Administration apparently embraced it as a centerpiece of its restructured SDI program?

ANSWER: Brilliant Pebbles (BP) is currently a technology development program supported by SDIO and executed through Lawrence Livermore National Laboratory. Brilliant Pebbles is an agressive technology program but there are a number of system engineering issues that must be addressed as part of the program. SDIO is currently pursuing these issues. With these caveats, Brilliant Pebbles still offers a potential for an effective space-based system at reduced cost.

QUESTION: How does the new emphasis on Brilliant Pebbles affect the efforts and budgets for the current Space-Based Interceptor Program and other kinetic energy weapons? Will any funds be redirected from those programs to Brilliant Pebbles? On what key advances an technological assumptions does the feasibility of Brilliant Pebbles rest?

ANSWER: SDIO is currently conducting Summer Reviews to determine the direction and level of effort of the Brilliant Pebbles program. It's integration with the rest of the SDIO program will be included in these reviews. This may have impact on other programs, but by the nature of the technologies it's expected that it will meld well with the current SBI program and other kinetic energy weapon technology. Brilliant Pebbles is a bottoms-up design that capitalizes on those technologies that are near term. System integration is the principal area needing to be addressed.

QUESTION: Results from the study efforts on Brilliant Pebbles will not be available until the end of fiscal 1989. Until those studies are available, most predictions about the cost, schedule, and feasibility of Brilliant Pebbles are premature. Is that correct?

ANSWER: Yes, these reviews will assist in answering those questions.

QUESTION: You have testified that if Brilliant Pebbles proves feasible, it could change SDI's architecture significantly. Several of the expensive systems now in Phase One would not be needed.

Until the Brilliant Pebbles assessments are available, what confidence can Congress have that the program it approves for FY90 will not change dramatically soon thereafter? How can Congress avoid spending significant funds to continue development of certain systems which may not be necessary if Brilliant Pebbles is feasible?

ANSWER: SDI has laid out a balanced technology program that continues to support either the current Phase One or as it may be modified through a Brilliant Pebbles architecture.

SDI Space Launch Requirements

QUESTION: SDI is studying alternative methods of launching and maintaining in orbit its space-based components. What is the status of these studies, and what are the preliminary estimates for launch costs associated with each method?

ANSWER: The FY88 ALS DAB directed the Air Force, the DoD Executive Agent for Space Launch, to examine the options for deploying Phase I, consistent with other national security launch requirements. The Air Force began that study in December 1988. While all the options have not yet been analyzed, options seem to be priced between $8-13B, depending on the architectures selected.

QUESTION: (a) What are the specific costs to launch and maintain SDI's Phase One with current capabilities, and what additional launch facilities would be required to accomplish this mission?

(b) When will budgetary resources be required to begin the booster procurement, facilities design and military construction for this mission?

ANSWER: (a) The definition of SDI's Phase One is currently under study and potential revision as a result of architecture studies investigating the impact of "brilliant pebbles" technology. The launch requirements of the revised Phase One architecture may be very different from the previous baseline presented to the September 88 Defense Acquisition Board (DAB) review. We are in the middle of studying the available alternatives for Phase One launch as a result of that DAB's tasking. Our current capabilities are not adequate to launch SDI's baseline Phase One architecture. Our preliminary estimates of the various alternatives for the life cycle launch costs for Phase One are on the order of from eight to thirteen billion dollars (FY89 constant dollars, including development, facilities and recurring costs). The additional facilities required will depend on the launch architecture selected. In all cases substantial additional or modifications would be required. Our preliminary life cycle cost estimates include facilities costs on the order of from one to four billion dollars, depending on the vehicle mix.

(b) The funding profile required varies radically as a function of the launch architecture selected as well as of the SDS architecture. For the mission model baselined in the September 88 SDIO DAB, our estimates are that substantial investment in launch would be required no later than fiscal year 1992.

QUESTION: How much of a budget commitment is SDI willing to make to the Advanced Launch System (ALS) program through the five year defense program (FY90-94) if it does not need ALS to deploy Phase I of a Strategic Defense System?

ANSWER: SDIO has committed the following budget for ALS:

$M	FY90	FY91	FY92	FY93	FY94
	100	125	150	175	185

The Air Force is budgeting slightly lower amounts in FY91-94. These funds support concept definition studies and a focused technology demonstration program in low cost propulsion, structures, avionics, aerothermal protection, and operations. While ALS may not be required for Phase I deployment, it most certainly will be required for follow-on phases. Consequently while Phase I may be capable of being launched without

ALS, ALS might be the most cost effective solution when other national launch requirements are considered. The AF study is examining this as part of their study.

QUESTION: (a) The ALS has been under funded. It will not meet the required first flight date nor its projected date for initial operational capability. The Defense Acquisition Board recognized this and directed that sufficient funds be budgeted in FY91 to rectify this situation. Has this been done and if not, why?

(b) Under the current funding profile, when will the ALS fly for the first time and when will it become operational?

ANSWER: (a) In August 1988, the DAB reviewed a configuration and schedule for a reference heavy-lift ALS vehicle to support a Phase One Strategic Defense System (SDS) deployment requiring approximately 3 million pounds per year equivalent mass to low earth orbit. At the same time SDIO was presenting the DAB with a revised Phase One architecture requiring, at most, 600,000 pounds equivalent in any year. The DAB did not approve a Milestone One for ALS, but instead approved Milestone Zero for the continued concept definition. The DAB tasked the AF to make adjustments as rquired to the FY91 budget to protect a 2000 IOC for ALS. It also required the AF to bring ALS full scale development funding and schedule issues to a Milestone One review currently scheduled for June 1990. Since then, SDIO has begun re-examining its overall architecture in light of "Brilliant Pebbles" technology, and the AF is studying alternatives for launching Phase One.

(b) The current ALS funding provides for technology maturation and concept demonstration/validation to protect a schedule for first launch in 1998 and IOC in 2000.

Theater Missile Defense Activities

QUESTION: (a) The former director of the Strategic Defense Initiative (SDI) complained about the adversarial and competitive relationship between his organization and the U.S. Army with respect to the separate programs both are pursuing to develop anti-tactical ballistic missile defenses (ATBM). The Army denied this charge.

(b) What has been done to improve the working relationships between the Army and SDI on anti-tactical ballistic missile defense activities?

(c) Have SDI and the Army been directed to establish a structure to eliminate any duplication between the theater missile defense systems and technologies each is developing?

ANSWER: (a) The former Director's

differences with the Army was the result of differing views of the threat and scope of the Department's overall efforts in the development of ATBM technologies. The Army, by the direction of Deputy Secretary Taft in January 1987, is the lead agency for the Department's ATM Program, and would be the ultimate developer and user of SDIO's technology. The Army's Anti-tactical Missile Program for Active Defense, though, was primarily focused on the development of the PATRIOT Air Defense system to enable it to provide point defense of PATRIOT sites and nearby critical assets against conventionally armed short range ballistic missiles like the SS-23, SCUD, and SS-21. However, the threat facing Europe and other U.S. Allies and friends, in SDIO's view, is more robust and includes these short range missiles armed with chemical and nuclear as well as conventional warheads; further, both Warsaw Pact and Third World short and intermediate range missiles, and (in a more strategic sense) retargeted long range weapons also pose threats not resolved. This perspective is consistent with SDIO's Presidential mandate to examine technologies for defense against ballistic missiles of all ranges that threaten the U.S. and its Allies. Furthermore, the SDIO program has included our Allies in its research, particularly in programs related to theater missile defense. In short, the perspective and focus of the Army program and SDIO's theatre defense initiatives are different.

(b) Army SDIO relationships continue to evolve and improve as more information about their respective programs is exchanged. A formal agreement between the Army and SDIO establishes this exchange arrangement and will ensure that Army research needs are presented to SDIO and that SDIO programs adequately consider those needs. This agreement codifies working relationships that have evolved over the past few months that include staff officer interaction, Army/Service participation in the Theater Defense Technology Panels established by SDIO, and other joint endeavors to ensure that the programs are mutually supporting.

(c) This guidance was provided by DEPSECDEF in Jan 1987 when he established service and agency responsibilities with regard to the development of anti-tactical missile programs. The recent SDIO-Army agreement further clarifies responsibilities and establishes (1) the framework to ensure that user needs and technology development are consistent and supportive, and (2) procedures to resolve differences when they arise.

QUESTION: Which theater missile defense system and technologies have been eliminated by SDIO and the Army as duplicative?

ANSWER: While the objectives and scope of each program have been and continue to be somewhat different, specific programs have been more complementary in terms of providing technical alternatives. The bottom line is that no programs have been terminated by either side as duplicative.

QUESTION: Has either SDI or the Army formally assessed the costs and research and development needed to adapt the ATBM systems each is pursuing to meet the unique needs of the other?

ANSWER: SDIO is chartered to develop technical alternatives for active defense against the ballistic missile threat facing U.S. deployed forces and/or our Allies. Where applicable, its efforts are intended to support the Army's ATM Program. The Army, on the other hand, is mandated by the Deputy Secretary of Defense to find solutions to a larger problem and to proceed to develop and deploy needed capabilities. Each of the SDIO programs that might support Army needs includes a cost estimate. For example, several candidate architecture were developed and the procurement, operation and maintenance costs for such architecture were estimated by the contractor.

Ground-Based Free Election Laser - Technical Integration Experiment

QUESTION: (a) Are you considering scaling back the ground based laser experiment for the time being?

(b) What technical rationale exists for such a reduction?

(c) How much longer would it take, and how much more would it cost to achieve the research and development objectives of the ground based laser experiment program if you scale it back at this time?

ANSWER: (a) SDIO has directed the Army (USASDC) to plan and execute a near term experimental option for the ground based free electron laser technology integration experiment (QBFEL Tie) that will utilize a lower power free electron laser (FEL) and a smaller beam control system (BCS) than previously planned. This near term experiment, to be completed on an accelerated schedule, will provide results at least one year earlier than our prior schedule.

(b) The objectives of the GBFEL Tie are to resolve the two critical issues of device (FEL/BCS) scaling and atmospheric propagation. The near term experiment will provide early answers to the critical propagation issues and will address major device scaling questions. Clearly SDIO feels that conclusive answers to these issues are required as soon as possible.

The size of the FEL and BCS has a direct impact on both cost and schedule of the GBFEL Tie. The near term experiment represents the best approach to obtaining timely results in a cost-effective, affordable manner.

(c) As noted above, the near term GBFEL Tie will utilize smaller devices and will therefore produce results earlier and at a substantially lower cost than the prior plan. If this early effort is successful, it may permit the direct entry in the follow-on phase to the demonstration and validation of prototype FEL and BCS hardware. Given this assumption, the SDIO would be able to achieve the research and development objectives of the GBL experiment program in a shorter, not longer timeframe and at lower, not higher, overall program cost.

QUESTION: Can you consider performing this experiment using the White Sands Facility now being designed, but rather with a modular approach so you can expand it in the future, rather than creating an entirely new smaller facility?

ANSWER: Within certain constraints, all the facilities being built to support this program will be done in a modular fashion with expansion to the next higher power level in mind. Both of the two competing Free Electron Laser candidates will be capable of being scaled without loss of equipment. When the laser beam control system is scaled to the next level, the initial set of optics will not be capable of handling the higher power and will have to be replaced. The advantage will be that we will be able to continue to conduct experiments with the initial beam control system while the larger system is being constructed.

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

Decisionmaking Process

QUESTION: I understand from answers to questions provided to a House Committee that full scale engineering development of phase I is going to cost 28.8 billion. Is that correct? Shouldn't congress make a decision on SDI overall before commencing such an expensive effort?

ANSWER: The Phase I Program reviewed in October 1988 contained 28.8 Billion for full scale engineering development (FSED). Subsequently the SDI budget requests for fiscal years 1990-1991 have been reduced. This reduction necessitates a replanning of the initial phase of SDI. The estimate of cost to accomplish FSED will be available when this is completed.

Brilliant Pebbles

QUESTION: Brilliant Pebbles is really a concept, is it not, for a highly decentralized architecture having autonomous, kinetic kill rockets?

ANSWER: Brilliant Pebbles is a technology development effort directed at a bottoms-up design of a kinetic energy interceptor. It focuses on a design that utilizes good engineering practice to minimize individual interceptor costs. It employs individual interceptors in a decentralized architecture that may be centrally controlled or employed in a predetermined manner. It is autonomous in that it contains the sensors on the interceptor that are necessary to supporting the intercept of a ballistic missile.

QUESTION: It does not need the BSTS or SSTS satellites, does it?

ANSWER: We do not yet know. Brilliant Pebbles could provide the initial defensive layer within a multi-layered ballistic missile defense. The exact composition of these tiers and the sensors related to them are being evaluated. Since Brilliant Pebbles include their own multi-spectral sensors for tracking and intercept of ballistic missiles, it may be possible to reduce requirements placed on other space-based sensors. However, BSTS attack warnings and SSTS for midcourse, will still be needed. An assessment of Brilliant Pebble's impact on the rest of the system will be evaluated in a space-architecture examination.

QUESTION: In contrast, your Phase I architecture is a centralized, non-autonomous system relying on sensor satellites and groups of kinetic kill rockets in carrier vehicles.

ANSWER: Yes, it is correct that the Phase I, DAB approved architecture, is a more centralized architecture than the Brilliant Pebbles architecture.

QUESTION: In fact last year when SDIO revised Phase I it was made less autonomous because the fire control systems were taken off the carrier vehicles and put on sensor satellites. Is that right?

ANSWER: No--the object was not a less autonomous system. The current DAB architecture did remove the fire control function from the carrier vehicle and place it on the sensor satellites and individual interceptors. This was done to reduce costs and weight of the carrier vehicles and resulted in a much more cost-effective system.

QUESTION: The difference between Phase I and Brilliant Pebbles is one of philosophy?

ANSWER: Yes, but the difference between Phase I and Brilliant Pebbles is also one of technology implementation and design approach. Brilliant Pebbles uses innovative technology approaches to provide a bottoms-up design to meet intercept requirements. It includes the multi-spectral sensing function on-board the interceptor vehicle itself to potentially reduce requirements on other satellites and minimize communication requirements. The Phase I is a top-down, requirements driven design approach which resulted in a different interceptor design and architecture. The difference is more than a philosophical difference that results in significant differences in technology and design. Given that Phase I is still in the demonstration and validation phase, the optimum design for a space-based interceptor will evolve with new technology.

QUESTION: You had more or less settled on the centralized approach in Phase I when you moved to Milestone I for Phase I on September 18, 1987, but now Lowell Wood has convinced you to backtrack and rethink your architectural philosophy?

ANSWER: Much has changed since September 1987. Technology has moved ahead significantly. The ability to employ simple sensors and small, complex processors on an interceptor has made Brilliant Pebbles more attractive. But it is still viewed as a technology development program that has to be proven.

QUESTION: I understand that the decentralized, autonomous approach was considered and rejected earlier, is that correct?

ANSWER: A decentralized, autonomous approach had been looked at earlier in the SDI program. It was previously viewed as attractive, but included unacceptable risks dictated by larger, more power-consuming electronics. Technology advances have begun to reduce these requirements.

QUESTION: When will you finish rethinking your architecture? Your statement says Brilliant Pebbles is "very early in the research phase".

ANSWER: The architecture for Brilliant Pebbles is being worked now. A nominal architecture is expected in late 1989 that will include Brilliant Pebbles in a multi-tier defense.

The Brilliant Pebbles research program is being reviewed to determine its future direction. This future direction along with continued progress in development of all strategy defense technology will continue to shape the architecture.

QUESTION: If Brilliant Pebbles does not pan out, how long will your program be set back? Your Five Year Defense Plan has $33 billion in it--that's enough for Brilliant Pebbles, but is it enough to stay on schedule for Phase I?

ANSWER: Brilliant Pebbles (BP) is being designed to be inserted into an architecture which will meet Phase I requirments with little or no disruption to current planning.

QUESTION: The Reagan Five Year Defense Plan had $10.5 billion more for SDI didn't it?

ANSWER: The Reagan Five Year Defense Plan had approximately $7.5 billion more for SDI than the President's budget request.

QUESTION: Some have said that Brilliant Pebbles interceptors might cost $100,000 apiece. Do you believe that? What is your estimate?

ANSWER: An overall review of Brilliant Pebbles cost is currently underway and the lead for developing an estimate has been assigned to the Air Force. In addition, SDIO is preparing an independent cost estimate. SDIO will evaluate Brilliant Pebbles technical capabilities and associated cost for possible insertion into the overall Phase I architecture at the completion of that study.

QUESTION: Will Brilliant Pebbles have a midcourse capability or will it only work in the boost/post-boost phase?

ANSWER: Brilliant Pebbles is being designed for the boost and post-boost phase of the defense. A future improvement might include a midcourse capability.

QUESTION: Some claim Brilliant Pebbles can be launched by existing rockets, but are the current launch facilities adequate?

ANSWER: The Air Force is currently performing a study to identify the most cost effective launch system for a Strategic Defense System deployment, which includes Brilliant Pebbles. Because individual Brilliant Pebbles are so small, a wide variety of launch vehicle options are available and being examined.

QUESTION: What would additional launch facilities cost?

ANSWER: Cost projections are dependent on the launch systems selected to deploy Brilliant Pebbles and will not be available until the Air Force completes its study.

QUESTION: Some have said that Brilliant Pebbles claimed such low costs because off-the-shelf commercial technology was being used. Does that off-the-shelf equipment meet the specifications for radiation hardness, vibration, and a space environment?

ANSWER: Off-the-shelf equipment does not normally meet full military specifications. However, the use of off-the-shelf commercial components results in significantly different costs due to the degree of inspection and testing in the parts production process. Currently, detailed studies are being conducted to assess technical feasibility of Brilliant Pebbles. Radiation hardening, shock and space qualification requirements are all technical issues being addressed in these SDIO-sponsored studies. Component trade-offs are likely, and therefore, the make-up of a final Brilliant Pebbles design remains open.

Cost of Phase I

QUESTION: I understand that Secretary Cheney enumerated to the House Armed Services Committee what SDIO receives in the latest Five Year Defense Plan. It rises from $4.6 billion in FY 1990 to $9.0 billion by FY 1994, is that correct?

That does not include what DOE gets for SDI programs?

ANSWER: The DoD portion of the SDI budget rises from $4.6 B in FY 90 to $9.0 B by FY 94. DOE's funding for this period is an addition to these amounts.

QUESTION: I understand that the Cost Analysis Improvement Group (CAIG) review of Phase I showed that with the exception of launch costs, the estimated requirements of SDI were by October, 1988, fully covered by the Five Year Defense Plan. The potential launch costs were still under development and review. At present, does the Five Year Defense Plan fully cover your Phase I program costs and supporting technology, including launch costs?

ANSWER: A Strategic Defense System architecture study is currently being conducted by the Air Force Space Systems Divisions. This study is seeking to determine the most cost-effective approach in meeting SDS launch requirements subject to fiscal constraints. At the present, the five year defense plan fully covers Phase I and supporting technology including launch costs.

QUESTION: With respect to your $69 billion figure, the CAIG review also found that assumptions for Phase I about the availability of technology and about schedules are optimistic, and achieving the "business as should be" assumptions in production will be a demanding challenge. Is that correct?

What are "business as should be" assumptions with regard to production?

ANSWER: "Business as should be" refers to the improvements in producibility that SDIO is planning for SDS Phase I. These changes are expected to occur as a result of early emphasis on design for producibility, significant planned investment in plants and procedures, novel system requirements such as mass production of identical (as opposed to "one of a kind") satellites and very high-rate satellite production.

SDS Phase I schedules are the result of analysis based on historical data and planned element program characteristics. These schedules are well within the feasible range based upon what has been accomplished in the past. With proper management and funding stability, "business as it should be" can be realized.

QUESTION: The Center for Peace and Freedom quoted Gen. Abrahamson as saying a later Phase of SDI with lasers and particle beam weapons would cost $50 billion. Do you agree?

ANSWER: Before his retirement, Gen Abrahamson has said he would like a cost "goal" for follow-on phases of around $50 billion for each phase, the same cost goal he set for Phase I. With the amount of research still to be done, with any likely deployment of a directed energy system not occurring before the early 2000's, and with the uncertainty of the form the threat will take in that time frame, the $50 billion goal is a mark to aim for, but cannot be taken now as a baseline or constraint.

The architecture for follow-on phases of the SDS are highly dependent on the threat responses employed by our adversaries. As a hedge against possible offensive responses, SDIO is pursuing research on directed energy weapons including high energy lasers and neutral particle beams. This research spans the range of system concept development, scientific proof-of-principle experiments, technical development of subsystems, near full scale demonstrations of components, and integrated ground and flight experiments. As part of this effort, cost-reduction measures for producing these devices are being examined. The directed energy weapons are still in the conceptual design phase. Different system concepts have been and are being examined in a variety of potential architectures against threats as best as can be projected at this time to examine options for the most effective and cost-efficient total SDS. While preliminary costs are being evaluated, it is too early to set a real cost baseline.

BSTS Satellite

QUESTION: What is it about the BSTS satellite, as presently configured for Phase I, that would make it violate the ABM Treaty?

Is it an easily discernible physical characteristic as compared to what an early warning satellite would look or act like?

Would the first BSTS satellite be Treaty compliant? Would it be unable to perform its entire mission for Phase I?

ANSWER: The BSTS satellite will replace our current space based early warning satellite (DSP) and offer the potential to become part of the Phase I of an SDS, should a decision to deploy strategic defenses be made. Regardless of the decision on SDS, BSTS is needed to replace the aging DSP system, offering a substantial improvement in early warning and other missions in a much more survivable system. The detailed requirements for the early warning/attack assessment mission are currently being drafted by the Air Force. The DoD Compliance Review Group is doing a comprehensive review of the BSTS program, to include requirements, architectures and capability.

QUESTION: An Article in the Washington Times of May 9, 1989, quotes Gen Abrahamson as saying that some useful tests of Brilliant Pebbles can be conducted under the narrow interpretation of the ABM Treaty, but "quite a few tests" outside the narrow interpretation would be required. Do you agree?

ANSWER: The DoD Complience Review Group has the proposed Brilliant Pebbles testing program under review. The detreminations made by this group are made available to the Congress as an appendix to the Annual Report to the Congress on the SDI program.

QUESTION: The article also says Gen. Abrahamson asserted that Brilliant Pebbles does not represent radically new technology, but instead is an outgrowth of research and cost-cutting efforts the program has pursued for years. Does this mean that SDIO has decided that Brilliant Pebbles is not based on "Other Physical

Principals," and therefore would gain no advantage from the broad interpretation of the ABM Treaty?

ANSWER: The DoD Complience Review Group has the proposed Brilliant Pebbles testing program under review. The determinations made by this group are made available to the Congress as an appendix to the Annual Report to the Congress on the SDI program.

Limited Protection System

QUESTION: On October 6, 1988, Gen. Robert Herres, Vice Chairman of the JCS tesified that the Phase I performance requirements, which were established by the JCS, are the minimum capability required to make a contribution to deterrence. Anything less than that, he said, does not deter a Soviet attack. Would you agree with that?

ANSWER: The Phase I requirements which were developed by the Joint Chiefs of Staff have been reviewed and endorsed by the Defense Acquisition Board, the Secretary of Defense, and the President. I fully support these requirements.

QUESTION: Does it not follow that a Limited Protection System with lesser capability than Phase I would therefore not contribute to deterring a Soviet attack?

ANSWER: As Gen. Herres stated, the Phase I performance requirements represent the minimum capability that would contribute to deterring a Soviet attack. The DoD has no plans to develop a distinct and separate deployment option for a limited protection system, other than Phase I. The development of such an option would impose additional and unwarranted costs and could not meet the minimum defense capability which the DoD requires to contribute meaningfully to deterrence and strategic stability.

National Security Directive

QUESTION: You were waiting for a National Security Directive on SDI, is that right? Did you get it? What did it say?

ANSWER: We received the President's guidance. In summary, the program's objectives remain unchanged.

QUESTION: Will that directive continue the policy that we will not enter Full Scale Engineering Development (FSED) without full consent of Congress and consultation with our Allies?

ANSWER: It is not possible to enter into full scale development without authorization and appropriation of funds by the Congress. Therefore, there is no way that any element of SDI may enter FSD without consultation with the Congress and subsequent approval by the Congress through legislation. With regards to consultation with the Allies, we shall continue to consult as appropriate on SDI program and policy developments with our Allies.

QUESTION: When do you anticipate you would be ready for a Phase I system FSED?

ANSWER: The SDI program is being conducted in such a way as to permit the President, in consultation with Congress and our allies as appropriate, to make an informed decision on the deployment of strategic defenses within the next four years.

QUESTION: Do you anticipate that by that point the Phase I components would all have reached FSED? If not, how confident could you be in the decision?

ANSWER: The SDI program is being conducted in such a way as to permit the President, in consultation with Congress and our allies as appropriate, to make an informed decision on the deployment of strategic defenses within the next four years.

Treaty

QUESTION: When do you anticipate you would first conduct a test that violates the ABM treaty?

At what point in your schedule would you ask Congress for permission to move toward breaking the Treaty?

ANSWER: All tests for FY90 and FY91 have been reviewed by the DoD Compliance Review Group and determined to be compliant with all U.S treaty obligations. Compliance decisions on those tests cannot be made until tests beyond 91 are more defined, and this definition will depend on earlier test results and the pace and direction of the program.

It is clear that the limitations found in the ABM Treaty would preclude the deployment of Phase I of an SDS.

QUESTIONS SUBMITTED BY SENATOR ROBERT C. BYRD

The Phase I Strategic Defense System (SDS)

QUESTION: The Defense Department is pursuing, a first phase concept, the Phase I Strategic Defense System (SDS), for the Strategic Defense Initiative. The Phase I SDS consists of ground- and space-based weapons, ground- and space-based sensors, and battle management elements. Deployment decisions on some elements of this system could be made early in the 1990's, followed by the deployment of weapons around the turn of the century. After a change in the design of some of the technologies and the architecture for the Phase I SDS during 1988, the Reagan Administration said such a system would cost about $70 billion (FY 1988) over the next ten years. If the Defense Department does not receive the $70 billion needed to deploy a Phase I SDS during the next decade, would you rather change the schedule, with no change in the system, or would you rather change the proposed system so that the United States could still deploy defenses by the end of the 1990's? How might a system that relied on large numbers of land-based interceptor missiles, and no space-based interceptor missiles, satisfy the mission requirements for a Phase I SDS and how much might such a system cost?

ANSWER: SDIO is reviewing alternative architectures and technologies that could result in the acquisition cost estimate being substantially reduced from $69 billion (FY88). Phase I has just entered the Demonstration and Validation phase; it is at a very early stage in the acquisition process and cost estimates can change. We anticipate bringing the total acquisition cost of Phase I below $69 billion.

The phase I architecture, with its multilayered approach is designed to be resilient to Soviet countermeasures. It also exhibits a heavy investment in an infrastructure of sensors and battle management which will permit additional weapons to be easily added. Phase I with its in-depth defense and preplanned growth potential, we believe is the most cost effective approach to defending against ballistic missiles.

Prospects for a Limited Protection System

QUESTION: (U) There has been widespread interest in the deployment of a Limited Protection System as a part of the Phase I SDS. If this system consisted of a hundred or maybe a few hundred land-based interceptor missiles, it might not violate the ABM Treaty. In addition, such a system might be deployed in the early to mid 1990's. Cost estimates range from $4 billion to $20 billion. How would a Limited Protection System contribute to the objective of enhancing deterrence as outlined for the Phase I SDS? If a Limited Protection System substituted for the systems in the Phase I SDS while the United States proceeded with research into more advanced technologies for comprehensive defenses, how much protection might such a system provide?

ANSWER: As Gen. Herres stated, the Phase I performance requirements represent the minimum capability that would contribute to deterring a Soviet attack. The DoD has no plans to develop a distinct and seperate deployment option for a limited protection system, other than Phase I. The development of such an option would impose additional and unwarrented costs and could not meet the minimum defense capability which the DoD requires to contribute meaningfully to deterrence and strategic stability.

Brilliant Pebbles

QUESTION: Recently, there has been growing interest among SDI supporters in pursuing the development of "Brilliant Pebbles" interceptor missiles for an initial Strategic Defense System. These relatively small and reportedly inexpensive space-based missiles could conceivably be deployed in the mid-1990's, replacing the current Phase I system architecture of ground- and space-based missiles. President Bush's revised FY 1990 defense budget includes additional funding to study the feasibility of the "Brilliant Pebbles" concept. Do you favor such an investment in space-based missile interceptor technologies while we are negotiating a START treaty? Would yo favor deployment of a Phase I SDS including "Brilliant Pebbles" if you knew the Soviets would respond by abrogating a START agreement?

ANSWER: Yes, we do favor investment in "Brilliant Pebbles" under all circumstances. Deployment of Phase I SDS is a decision for the President, in consultation with Congress and the allies as appropriate.

Boost Surveillance and Tracking System (BSTS)

QUESTION: The Reagan Administration requested funds for full-scale development of the Boost Surveillance and Tracking System (BSTS) in FY 1990. A single contractor was to be selected in the first half of 1990, and the total acquisition program was to cost some $8 billion, with initial deployments beginning in the mid to late 1990's. [a] Please compare the Bush Administration in regard to mission requirements, schedule and costs. BSTS is apparently expected to be more a capable and survivable early warning system than the current Defense Support Program (DSP) satellite system, but it will not be able to assign or direct Anti-Ballistic Missile (ABM) interceptors. [b] How do Phase I early warning requirements differ from our current early warning requirements, especially in regard to information and communication requirements? [c] Why can't these requirements be met with an upgraded Defense Support Program rather than a Boost Surveillance and Tracking System?

ANSWER: (U) [a] The current schedule delays the start of FSD by six months, deletes a flight experiment, lengthens the build cycle of the first vehicle thus delaying the first launch one year, and delays IOC & FOC by one year. Mission requirements and projected costs have not changed.

[Deleted.]

(U) [c] DSP has grown and evolved over the years to provide increasingly better early warning information. It has indeed performed its role admirably. It is, however, a design that is based on rather dated technology and has a limited ability to further evolve without major design changes. DSP does not satisfy all it is currently asked to do, nor is it expected to be able to do what must be done by the end of the next decade. But, the legacy provided by the engineering and testing and contained in the data collected by DSP are in no small part responsible for the degree of confidence present in our position that the early warning mission can be satisfied into the future with new technology and new designs.

(U) BSTS is in fact intended to replace the current DSP. BSTS, in its primary early warning capacity, will be the cost effective "upgrade" intended to meet the current and projected deficiencies of the DSP. As BSTS moves via free and open competition to a single contractor and system design for subsequent development, all contractors have been invited to submit proposals. If the cost-effective, manageable risk proposal to the BSTS requirements, judged against common requirements and proposal guidelines in a structured selection process, is an "updated" version of today's DSP, then BSTS will be an "updated" DSP.

Anti-Satellites (ASATs)

QUESTION: Pentagon officials have expressed a desire to develop and deploy anti-satellite (ASAT) weapons that would apply kinetic energy and directed energy technology developed within SDI. Please discuss the technological differences between an ASAT interceptor and an ABM interceptor, based on the same basic missile technology. How will you ensure that the development and deployment of an ASAT using SDI technology will not preclude further development and testing of the Exoatmospheric Re-entry Interceptor System (ERIS) and other SDI systems under terms of the ABM treaty? How will the ASAT program interact with SDI interims of manpower and organization for research and management?

ANSWER: The technology being developed for SDI DE and KE interceptors, including sensors, avionics, propulsion, power generation, etc., could likely be incorporated generically into any ASAT design. However, the differing threat parameters (e.g., target size, velocity, and signature), deployment time (earlier than SDS), and battle space requirements (e.g., orbiting vs. re-entering and different basing concepts) for the ASAT versus the SDI interceptor will tend to significantly impact the type and degree of applied technology transfer between the two efforts.

SDIO is not involved in the structuring or execution of an ASAT program with any of the services other than on an informal advisory basis for technology application. The Army, which has been assigned by the Secretary of Defense as the interim lead service in a Joint Program Office (JPO), has established the JPO at the US Army Strategic Defense Command in Huntsville, Alabama. The reasons for this choice of location are the Army's experience in this type of program and the technology and engineering experience base residing in Huntsville.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

QUESTION: An important question to be answered on SDI is whether U.S. security would be helped or hurt by the deployment of a comprehensive ballistic missile defense by both sides. Staff of Senator Johnston and myself were told by SDIO officials in March '88 that such a study, which had not been done until then, was just in the process of being kicked off. Has that study been completed? Why was this not studied far earlier?

ANSWER: Since the study was initiated, a number of key study elements have evolved and new ones have developed, including conventional and nuclear arms control negotiations, Soviet force structure initiatives, potential threat definitions, SDI program funding, and Phase I defense architectural refinements. As you are aware, these continue to evolve and, while we have developed interim and preliminary observations and findings, the changing strategic environment mandates that the study be a continuing effort. As we mentioned in our answer last year, it is somewhat misleading to imply the issue had never before been addressed. From a qualitative perspective the "Future Security Strategy Study," completed by Mr. Fred Hoffman soon after President Reagan's 1983 SDI speech, pointed to improved U.S. security available with two-sided defenses. Subsequent quantitative efforts also supported the notion that U.S. security would be "helped" by two-sided defenses.

QUESTION: What is your estimate for the cost of Brilliant Pebbles per "Pebble"? I have heard $100,000-$1M. Given that AMRAAM will cost, if we are lucky, $470,000 per missile, isn't the cost for a Brilliant Pebble very optimistic?

ANSWER: An overall review of Brilliant Pebbles cost is currently underway and the lead for developing an estimate has been assigned to the Air Force. In addition SDIO is preparing an independent cost estimate. SDIO will evaluate Brilliant Pebbles technical capabilities and associated cost for possible insertion into the overall Phase I architecture at the completion of that study.

QUESTION: An Unclassified SDIO SBI Timeline showed SBIs beginning to be fired 58 seconds after detection of Soviet Missile launch. This is consistent with a letter I received from Gen Abrahamson a couple of years ago saying that SBIS would need to begin firing 50-100 seconds after receipt of warning that launch had occurred. Are these figures still accurate? Are they also accurate for Brilliant Pebbles?

ANSWER: The 58 seconds you quote is still valid, but you must realize it is a nominal time. The actual time will vary depending upon the delay due to weapon release authority delays, and warning time. Also, the release time for intercept of the last enemy missile launch will be shorter than the release time for intercept of the first launch. Thus, the range of times, 50-100 seconds, is a more accurate representation of release time. Brilliant Pebbles release times are comparable.

QUESTION: Would the SDI Phase I architecture be capable of destroying more than a few SS-25s in the boost phase?

ANSWER: No. The Phase I SDS does not provide continuous coverage of the SS-25 deployment region given the available time. (SS-25 Burn Time minus Surveillance/Command and Control Timeline).

QUESTION: If the Soviets built an ICBM just like the MX/Peacekeeper, would the SDI Phase I architecture be capable of destroying more than a few of these Soviet missiles in the boost phase?

ANSWER: The kill capability against a Peacekeeper type ballistic missile has to be evaluated against both the boost and post-boost phase, i.e., when missile is susceptible to a space-based interceptor. Since the Peacekeeper Post-Boost Vehicle bussing time is long due to the accuracy requirements and the start/stop operation associated with the bus, a substantial number of RVs would be destroyed in the Boost/Post Boost phase of flight.

QUESTION: If the Soviets built an ICBM just like the Minuteman III, would the SDI Phase I architecture be capable of destroying more than a few of these Soviet Missiles in the boost phase?

ANSWER: Same as Question 46.

QUESTION: Would the SDI Phase I architecture for SDI be capable of destroying more than a few SS-13s in the boost phase?

ANSWER: The burn time of the SS-13 is similar to the Peacekeeper. The SS-13 is in the process of being phased out of the Soviet Strategic Arsenal and represents less than 1% of their force.

QUESTION: Wouldn't the BSTS Satellite eventually represent a violation of the ABM Treaty? How could the Soviets tell the difference between a BSTS that was treaty compliant and one that was not?

ANSWER: The BSTS satellite will replace our current space based early warning satellite (DSP) and offer the potential to become part of the Phase I of an SDS, should a decision to deploy strategic defense be made. Regardless of the decision on SDS, BSTS is needed to replace the aging DSP system, offering substantial improvement in early warning and other missions in a much more survivable system. The detailed requirements for the early warning/attach assessment mission are currently being drafted by the Air Force. The DoD Compliance Review Group is doing a comprehensive review of the BSTS program, to include requirements, architectures and capability. To date they have not reached a decision on the compliance of BSTS, however, they expect to issue guidelines on BSTS compliance by the summer of 1989.

QUESTION: Which would result in a greater reduction of Soviet strategic warheads threatening the United States -- signing and implementing a START Treaty along the lines of the framework currently agreed upon, or a Phase I SDI system that met the criteria established by the JCS?

ANSWER: Although we reject the contention that progress on a START agreement should be held hostage to SDI, we do believe that there is a relationship between offensive and defensive arms. Not only do offensive reductions contribute to the effectiveness of defenses, but the more progress we make toward offensive reductions the more we will need to rely on SDI to help us to deter, or deal with, possible Soviet cheating or breakout.

Simply reducing the number of Soviet strategic warheads targeting the United States does not necessarily increase deterrence. A Strategic Defense System would not only reduce the number of warheads that could reach the United States, it would also increase the uncertainty in the minds of the Soviet military planners as to which warheads would reach their assigned targets. This uncertainty would increase deterrence through the denial of Soviet objectives.

QUESTION: Isn't it true that if the Soviets replaced all their SS-18s with SS-24 ICBMs, the number of warheads that could be killed by the Phase I architecture would drop substantially?

ANSWER: No. The preference for (d) kills by the Phase I Architecture is driven by mission requirements. [Deleted]. The integrated Boost/Post Boost effectiveness (measured in # of warheads negated) would remain fairly constant.

QUESTIONS SUBMITTED BY SENATOR ALFONSE M. D'AMATO

Funding

QUESTION: How, specifically, would the SDIO's program be effected should its budget be held to know growth in FY90? What impact would a no growth budget have on the deployment date of the Phase I architecture?

ANSWER: This funding level could not support the research and testing needed to make an informed deployment decision within four years. The imposition of a no growth budget for FY90 would have the following adverse effects:

- U.S. funding for most Allied cooperative programs would be terminated;
- if we are to continue development of layered defenses that meet JCS requirements,

Directed Energy and Advanced Technology programs for follow-on systems would have to be canceled and/or minimally funded;

- all aspects of the program would be fund-limited, rather than free to advance at the pace technology is developed;
- the national workforce currently planned for FY 1990 SDI research would be reduced by more than 8000 personnel

Deployment

QUESTION: How can Phase I architecture be focused or prioritized to accelerate deployment?

ANSWER: Past budget cuts have delayed potential timelines. The best method to ensure timely deployment is full budget appropriation.

BSTS

QUESTION: What are the advantages and disadvantages of the starer and scanner that are competing for the BSTS contract?

ANSWER: The advantages and disadvantages of the sensor concepts competing for the BSTS contract are:

In general terms, the starer could be the more sensitive (due to its inherently long "swell time"). The scanner must give up coverage, but could, with more sensitive individual detectors and a reduced scan rate, approach this higher sensitivity. The inclined operational orbits, needed for polar coverage, have an impact on the sensitivity of these two sensor concepts as well. The scanner's performance is essentially insensitive to inclination. Overall, at the equator the scanner is better near nadir--the starer better near the edge of the field-of-view; at max orbit latitude the starer is better near nadir--the scanner better near the edge of the field-of-view. The scanner has fewer costly focal plane detector channels, possibly a lower resultant focal plane array cost. The starer has lower processor loading.

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will now stand in recess until 10 o'clock, Tuesday morning, May 16. At that time we'll discuss land warfare issues with witnesses from the Army and Marine Corps.

[Whereupon, at 12:55 p.m., Thursday, May 11, the subcommittee was recessed to reconvene subject to the call of the Chair.]

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